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Royal Medico-Chirurgical Society of Glasgow

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THE
GLASGOW MEDICAL JOURNAL.

THE
GLASGOW MEDICAL JOURNAL.

EDITED BY

THOMAS KIRKPATRICK MONRO, M.D.,

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session as interesting and instructive as others which have passed, and to increase our knowledge of the science and art of obstetrics and gynæcology. The true educative value of a medical society consists chiefly in the associated action which it fosters, as well as in the development and interchange of knowledge; and, in the case of one devoted to our special study, in the planning of means for lessening the sufferings of women, and for rendering their lives healthier, happier, and consequently of longer duration. We meet to give and to receive, and both in giving and in receiving we must increase our own stores of knowledge. By our discussions we help to elicit the truth from the conflicting statements of what is truth. There are also other social benefits which more directly accrue to ourselves from active intercourse in medical societies and which are not easily expressed in words. But in the frequent and familiar comparison of cases, and in the expression of thoughts and views on professional subjects, deeper habits of observation and broader ranges of thought are stimulated, while generous rivalries and friendly criticism tend to replace the narrow prejudices and unfair depreciation which exist in our profession, as in every other, but which so frequently arise solely from imperfect knowledge, and from the isolated action which is one of the most serious drawbacks to the daily work of many medical practitioners.

In the selection of a subject for the address which it is customary to expect from a newly elected president, I have experienced considerable difficulty. It might be thought that an almost unlimited choice is afforded; but, although the field is undoubtedly extensive, there are several sharply marked boundaries. For example, an address upon a special subject or upon some particular case appears more suited to an ordinary meeting of the Society; and, in like manner, objections spring up to almost every suggested subject of address. However, it finally occurred to me that I am the first president elected in this century, and that I had, therefore, a legitimate as well as a tempting opportunity of comparing the present position of obstetrics and gynæcology with that of a hundred years ago, and of indicating one or two of the lines on which progress requires to be made during this century. My remarks must necessarily be somewhat desultory and fragmentary, and the treatment of the subject incomplete. And I must crave your considerate attention and indulgence while I attempt to perform my task, for when my memory recalls other presidential addresses, and I remind myself that whatever I shall say must have been often already said or

thought, I feel constrained to ask myself the question put by the preacher of old, and to answer it as he did—"For what can the man do that cometh after the king? Even that which hath been already done."

One hundred years form a very short division of time in the life of this world, and even in relation to the generations of men the period is not long. Individual men and women here and there even attain or pass their century of life, and I have had the pleasure of knowing two who have done so. But in one of these comparatively short spaces of time—from the beginning of the nineteenth until the dawn of the twentieth century—what marvellous changes have occurred in every department of human activity and thought. It must be evident to us, without looking farther than the bounds of our own country, that more change—more progress, we venture to call it—has been made during the last hundred years than in all the previous hundreds of years in the history of the world. Not even the wildest day-dreams of an optimistic enthusiast of the eighteenth century could have foreshadowed such changes as have occurred during the nineteenth century. Most of them have become so familiar to us nowadays, and our sense of wonder has become so dulled by the repetition of new discoveries and marvels, that we can scarcely appreciate, without an effort, the improvements in the ordinary conditions of daily life as compared with those of even a few years ago. Among the many, I need only refer, in illustration, to the everyday employment of electricity in a thousand forms to remind you of the wide gulf which separates us from our forefathers in thought, word, and deed.

The discoveries and inventions of the nineteenth century were not the results of happy chance or guess, but have evolved from a patient study of natural laws, and each new one has been the embodiment of some scientific idea. Our experience has also proved that discoveries in every branch of science, however remote from the interests of everyday life they may at first have appeared, and however useless they may have seemed to the "practical" man, have yet in many cases conferred unforeseen and incalculable benefits upon mankind. There is, moreover, a reciprocal action between science and its application to the useful purposes of life; for while no advance is ever made in any department of science which does not sooner or later give rise to a corresponding improvement in practical art, so, on the other hand, every advance in practical art furnishes the best illustration of scientific principles.

In no other art and science than that of medicine have these propositions which I have stated been more decidedly and clearly exemplified. For hundreds of years it had been the prey of successive warring systems, which were founded almost wholly on ignorance, superstition, and speculation, and these systems were compelled to be arbitrarily adjusted, however absurdly, with the ideas which were created and fostered by imperfect knowledge. In fact, "medicine was reduced to a mere department of speculative philosophy, involved in futile disputations and in formulas based on no substantial facts," while in actual practice the medical branch of the healing art was in the hands of the astrologer, miracle-worker, and the royal toucher, and surgery, such as it was, was a humble appendage to the work of the barber. Yet here and there, and even in the darkest ages, a few elect spirits, scattered throughout the European countries, kept burning, however dimly, the lamp of investigation, and anatomy and physiology made no inconsiderable progress, especially after the days of Harvey and his contemporaries. But not until the close of the eighteenth century of our era and the opening of the nineteenth did there come about the practical downfall of system-making and superficial speculation, as well as the credulous belief in humours and temperaments as the prime factors in the production of disease. By that time the foundations of such crude theories and speculations became sapped; the philosophers were dismissed, and their extravagant conceptions rejected. Criticism now began to assert itself, and soon after was necessarily followed by creation, vitalised and inspired by experiment and investigation. This new order of things actually began in earnest in the eighteenth century, and chiefly owed its inception to the genius of our countryman, John Hunter, whose untiring methods of research and "faculty of taking infinite pains" laid the foundations upon which we are still building to-day. Since his time the invention of instruments of precision has led to many important discoveries, and has done much to transform medicine from a mere empirical art to a science founded on accurate observation and patient investigation. The perfected microscope, the stethoscope, ophthalmoscope, clinical thermometer, the test-tube, and many other instruments, have brought about accuracy in diagnosis such as could not have been dreamt of a hundred years ago. In the discovery of the causes of disease, in preventive medicine, in the use of anæsthetics, antiseptics, antitoxins, and organic extracts, advances have been made all along the line in every

department of medicine. It can be affirmed with absolute truth that practically no progress was made from the time of the ancient Egyptian physicians until the seventeenth and eighteenth centuries of the Christian era; but that, after the latter century especially, it has gone forward since then as a science with never-halting steps. The great physiologists, anatomists, chemists, and pathologists of this and other countries, with patient observation and careful deduction, laid the foundation upon which modern scientific medicine has been erected.

The change between a hundred years ago and now may be summed up as being from speculation to investigation. Behind all our thoughts and all our acts nowadays we have ever, consciously or unconsciously, the instinct to live up to Hunter's famous dictum—"Don't think; try the experiment."

We have now taken a very hasty survey of the general condition of medical science at the dawn of the last century, and of its progress since then. What, now, can we say of those special branches to which our Society devotes its particular attention and study? Before we reply to that question, it must not be forgotten that, so far as the practice of midwifery is concerned, in its simplest form it merely involves the control and supervision of a purely physiological act, and that in only a small proportion of cases does any departure from the normal occur. The actual practice of obstetrics as an art could never, therefore, have become involved in any speculative philosophy or abstract system, and superstition could affect it only to a slight and harmless degree. The obstetric art must necessarily be the most ancient of all the departments of medicine, for in all ages and in all countries, and since the creation of the human family, woman has required help in her hour of travail. It is, moreover, almost certain that the farther back we could look, the more natural, easy, and free from danger would we find the birth of a child to have been, just as to-day among the more primitive races parturition is effected, as a rule, with great facility, rapidity, and safety. Consideration of these statements will afford to us a partial explanation of the fact that a century ago, and, indeed, until almost our own times, the practice of midwifery was looked down upon with considerable contempt by physicians, and deemed derogatory to professional dignity. In proof of this, we may note that in 1765 the Fellows of the Edinburgh College of Physicians ruled that no one could be admitted a Fellow whose "common business it is to practise midwifery;" and, further, that if any Fellow practised these

"low arts," he was to be degraded: while in 1811, in London, the condition of those practising midwifery was considered so degraded that the Royal College of Physicians held such practitioners to be unworthy of the Fellowship, and this stigma was not removed until 1825. On 2nd May, 1827, this same College, in an official document to the Secretary of State to the Home Department, when speaking of midwifery, characterised it as "an art foreign to the habits of gentlemen of enlarged academic education;" and so late as 1843 the Fellows of the Royal College of Surgeons of England ordered that no Fellow would be admitted to the Council if he practised midwifery.

It cannot, therefore, be a source of astonishment to learn that a hundred years ago midwifery was practised in Britain as the art of the handy woman, that only a few exceptional persons could pretend to have more than a mere smattering of its scientific principles, and that the vast majority of women were attended during their confinements by midwives, neighbours, or medical men, all almost equally ignorant of the proper treatment of abnormalities and complications, or of the prevention of septic infection. The last century had, indeed, to run many years of its course before a transition to a better state of affairs was effected, and consequently, while of course many thousands of children were born naturally and without danger to the mother, much preventable disease, suffering, and death must have occurred in innumerable cases.

The teaching of midwifery in Glasgow, until the end of the eighteenth century, had been imparted to students and midwives in a perfunctory and unsatisfactory manner. In the University, the Professor of Anatomy and Botany (William Hamilton, 1781-1790), voluntarily added lectures on midwifery to his curriculum, but it can hardly be imagined that, with such diverse subjects on hand, more than the barest smattering could have been taught by him, even though he had been a second Admirable Crichton. Before his day, however, extra-mural teaching in obstetrics had been carried on by two practitioners, and they seem to have been the pioneers in the work.

In the *Glasgow Journal* of 15th October, 1759, as Dr. Alexander Duncan relates in his *Memorials of the Faculty of Physicians and Surgeons*, Mr. James Muir advertised thus—

James Muir, Surgeon, will begin a course of lectures on Midwifery, upon Monday, 12th November. No woman will be admitted to these lectures unless her character for sobriety and prudence is

attested by some person of reputation in the place she lives in. Mr. Muir continues as usual to deliver gratis all such women as apply in that way for his assistance. He intends to begin a course of midwifery for students about the end of December or beginning of January.

Nineteen years later, in 1778, another advertisement appeared in the local journal—

Midwifery.—James Monteith, Surgeon (having provided the necessary apparatus), proposes, on Thursday, the 26th of March, to begin a course of lectures on the theory and practice of Midwifery, to which will be added a set of lectures on the diseases of women and children, observations on Inoculation, &c. Inquire at his shop, middle of Stockwell Street, or at his lodgings, Miss Semple's, New Street. At a separate hour, attendance will be given for the instruction of women in the practice of midwifery.

We cannot now reproduce with absolute accuracy the scenes and actions in the life dramas of those who lived a hundred years ago. The men and women of that time have long since faded out of remembrance, and only a master in literature could revive to us their manners and customs, their modes of daily life, and the habits of thought which were common to them as they are more or less to all in their respective generations. Glasgow then was a comparatively small city, containing from seventy to eighty thousand inhabitants, and it seems to us, who look backwards through the mists of those bygone days, in moments when we are wearied and harassed by the feverish struggle and turmoil of our own times, that life must have flowed far more easily and simply then than now, though we must not forget that the currents which ebb and flow in human hearts must always have pulsed, as they always shall pulsate, to the same everlasting needs and passions. There is a broad sameness in the human lot throughout all the ages which never varies, and successive generations experience the same never-ending cycles of labour and rest, health and disease, and, above all and overwhelming all by their tremendous possibilities of joy and woe, birth and death. To the men who were then studying, although imperfectly and dimly, these phenomena in their physical aspects, knowledge had hardly yet arrived, and wisdom still lingered, and, in their undeveloped power and beneficence, afforded little aid to parturient women a hundred years ago. The very backward condition of obstetrics which then existed in Glasgow can also be realised by recalling to our minds the imperfect teaching of the subject to medical students, as evidenced by the fact

that a chair of midwifery was not established in the University until 1815, as well as by the inferior social status of practitioners of the art, and the half-contemptuous regard in which they were held.

In every age and in every sphere of life, however, there are exceptional men in advance of the thoughts and actions of their age, more gifted mentally than their contemporaries, and who can lend dignity to their work, whatever it may be, and can command respect for it.

A notable example, a century ago, was John Burns, a son of the Rev. Dr. John Burns, of the Barony Church, and a member of a family many of whom have written their records honourably and deeply in the medical, clinical, and shipping annals of Britain. Burns, in 1797, at the early age of 23, started a course of clinical lectures, being the first to do so in Glasgow, and teaching anatomy, surgery, and midwifery. Later on, in 1815, he was appointed to the Chair of Surgery in the University, and subsequently he took his M.D. degree in 1828, and, though still professor of surgery, was elected a physician to the Royal Infirmary. In our days of specialism such a career is impossible, and the contrast between then and now could scarcely be more vividly conjured up than by the recital of the chief events in Burns's medical life. In 1807, he published his *Principles of Midwifery, including the Diseases of Women and Children*, which eventually went through ten editions and was translated, so that it may be regarded as representing the most advanced state of knowledge of its subject at the time. In England, the standard work was Dr. Thomas Denman's *Introduction to the Practice of Midwifery*, the last edition of which was published in 1805. When we look through these books we see that, in some parts, such as the description of the normal pelvis, the information given was fairly correct; but, on the other hand, much was then shrouded in darkness which has been brought to light, many errors and mistakes have been corrected, and along with the increase of knowledge there has come, as a consequence, the power to treat the diseases of pregnancy and to overcome the difficulties of labour with a precision of aim and a certainty of successful result impossible to Burns, Denman, and their contemporaries.

It would be useless, in the time at my disposal, to attempt to notice more than a very few of the more important points of contrast between the teaching and practice of midwifery as portrayed in Burns's text-book—which may be regarded as typical of a century ago in Scotland—and the teaching and

practice in our own times. As to the actual books themselves, what, perhaps, strikes one conversant with the modern literature of the subject are the baldness and brevity of the language then employed. Nowadays, we have come into the possession of such vast legacies of facts that it is hardly possible to write a book on obstetrics, unless merely a students' manual, which does not overflow into two or three volumes, and which requires more than one author to do justice to the subject. Another marked difference is that there were no illustrations in the works of Burns or Denman, and we all know what an important and essential part they play in modern text-books. As already said, a perusal of the books reveals many points in which we have put far behind us our ancestors of a century ago. For example, auscultation could never then be practised as a symptom of pregnancy, as Lænnec had not yet invented the stethoscope, and so positive diagnosis could not be made until one could "distinguish the members of the child and feel its jerks and motions." Nor was the value of abdominal palpation understood. It is not mentioned as a means of diagnosis, and, even in post-partum hæmorrhage, Burns advises, in order to excite uterine contractions, merely the application of cold water cloths to the abdomen, and, what he considers the most important detail of treatment, the introduction of the hand into the uterus. No elaborate directions are given for the proper cleansing of the hands and fore-arms; in fact, the practitioner is not taught the necessity of even a simple washing of the hands with soap and water. Burns merely says that "in order to avoid pain and irritation, it is customary to anoint the finger with oil or pomatum, but . . . it is not very requisite." Making a vaginal examination was evidently regarded as a very serious and solemn act or ceremony, as "it is usual for the room to be darkened, and the bed curtains drawn close during an examination," and, moreover, "it should never, if possible, be proposed or made whilst an unmarried lady is in the room." What would Burns and his contemporaries say and think could they revisit this world and view the conduct of a midwifery case in a modern hospital. Most certainly they would be thoroughly horrified and shocked as well as bewildered, for, strangely enough, a spurious delicacy of conduct was one very striking feature of an essentially coarse and indelicate age.

The mechanism of parturition had been ably studied at this date by Smellie and Ould, by Roederer and Solayrés, but many mistaken ideas still remained when Burns wrote, and, in fact, in an ordinary midwifery book intended for students,

practitioners, and nurses the whole of this important subject was usually dismissed in a page or two. The consequence must have been in actual practice that, as the natural mechanism was unknown, the mechanism of delivery in those slighter forms of pelvic contraction, which, though they do not prevent, yet render difficult the birth of the child, was also unknown. Naturally, then, it must have been impossible in such cases to select the best method of delivery while the patient's strength was unimpaired and her tissues undamaged, and embryulcia or Cæsarean section could have been determined necessary only after long continued attempts to deliver by forceps had resulted in failure.

This ignorance persisted until well on in the last century, although the apathetic and indifferent attitude of our profession towards obstetrics received occasionally a rude shock. One which must have startled and aroused the attention of all classes to this dangerous and alarming condition was the tragic death, in 1817, of Princess Charlotte, daughter of George IV, wife of Prince Leopold of Coburg, and the heiress-apparent to the throne. As is well known, the management of her first confinement was so inefficient that, fifty hours after the rupture of the membranes, she was delivered of a stillborn child, and in five hours later she died. The consternation and sorrow aroused by this unhappy occurrence were felt among all classes, for it was well known that the Princess had spent her earlier years in misery and restraint, and that her brief married life had been, to use her own words, "a very, very happy one." The next heir, the King's brother, was as little respected and admired as the King, and thus the grief and disappointment aroused by the untimely death of the Princess and her child were, from many and various causes, bitter and deep. One result, however, was that the eyes of both the medical profession and the public must have been opened to the prevailing defective knowledge of the principles of midwifery, and the urgent necessity for more thorough study and teaching must have been made very evident. No doubt, to many in the profession the national calamity acted as a stimulus, and must have roused them to investigate many problems still unsolved then, and must have determined them to abandon futile speculation and armchair theory in favour of careful clinical research.

The further study of the obstetric art in those bygone days, though deeply interesting, is not permitted by the time at our disposal, and in next speaking of the knowledge then possessed of the diseases of women there is no possibility of undue

prolixity, for to all practical purposes there was blank ignorance regarding these diseases. In fact, Denman employed only the one word, Midwifery, as inclusive of the diseases of women, and though the title of Burns's work was *The Principles of Midwifery, including the Diseases of Women and Children*, still, in both instances, gynæcology (a term unknown then) was dismissed in a single chapter, which was composed of a curious medley of diseases, pseudo-diseases, and symptoms—hysteritis, tubercles, encysted tumour and varices, fluor albus, and others. The pathology and differential diagnosis of the diseases were unknown, and, as a matter of course, the treatment was empirical and unsatisfactory. The only affection of the uterus which had been fairly well recognised was polypus, and Burns devotes much more space to it than to any other. The method of the treatment which he favours is that of ligature with “a firm silk cord, or a well-twisted hemp string, properly rubbed with wax, or covered with a varnish of elastic gum.” This is to be applied to the neck of the polypus by the aid of a double canula, and, “after the polypus is tied, it is felt to be more turgid and harder; and if visible it is found of a livid colour, and presently exhales a fœtid smell. These are favourable signs.” These words require no comment; they are striking evidences of the wide gulf that stretches between the operative gynæcology of those days and that of 1902.

The gross lesions in diseases of the ovaries had become known through the medium of *post-mortem* studies, and Burns describes what was then generally called “ovarian dropsy” as being “not dependent on an increased effusion of a natural serous secretion or exhalation, but more akin to encysted tumours, consisting in a peculiar change of structure and the formation of many cysts, containing sometimes watery, but generally viscid, fluid, and having cellular, fleshy, or indurated substance interposed between them, frequently in considerable masses. Sometimes there is only one large cyst containing serous fluid; but more frequently we have a great many in a state of progressive enlargement.” This is, so far as it goes, an accurate description, though shockingly involved and not very grammatical, of multilocular and unilocular ovarian or parovarian disease, and the treatment recommended is to palliate symptoms “until the distension becomes troublesome, when we must tap the tumour, which gives very great relief, and by being repeated according to circumstances, may contribute to prolong life for a length of time.” Denman adds another piece of advice which surely must have been evolved from his own inner consciousness, and can never have been

successful in actual practice. He says, "I have recommended such exercise as was most likely to affect the part, as spinning or turning the lathe. It is well known, when the abdomen is much distended, that by a fall or some extraordinary motion the cyst has been broken, and the water contained in it speedily absorbed and carried off by the common emunctories."

In 1802 the removal of diseased ovaries had never been performed, although William Hunter, forty years previously, had foreshadowed the possibility of the operation, and in 1785 John Hunter wrote—"I cannot see any reason why, when the disease can be ascertained in an early stage, we should not make an opening into the abdomen and extract the cyst itself."

As is well known, the first ovariectomy, guided by scientific principles, was not performed until 1809, the pioneer being Ephraim M'Dowell, a native of Virginia, practising in Kentucky. We in Scotland can claim him as one of our own sons by descent, and, in addition, he received his inspiration from his teacher, John Bell, that surgical genius, whose lectures he had attended in Edinburgh.

A hundred years ago, therefore, thousands of women had been, and still were, condemned to spend years in misery and suffering, with no hope of relief except by the approach of death, the inevitable end: but who, had they been born in our days, could have looked forward with quiet confidence to an almost certain restoration to perfect health.

In recapitulation of this part of our subject, it may be said that a century ago obstetrics was practically not recognised as a necessary or even a very worthy object of study, as a necessary branch of a medical education, or as affording a field for medical science worth cultivation by the best men of our profession. It had, perhaps, emerged from its state of infancy, but was certainly still in its childhood, and its history since then has been that of progress from childhood to adolescence. And gynæcology is, to all intents and purposes, a new creation of the last fifty years; it cannot be said to have had any existence a hundred years ago.

I do not intend to attempt the impossible task of recounting in detail the progress which has been made in the art and science of obstetrics since those days, but simply remind you that the results may be seen in the chairs of midwifery established in every university and medical school, in our maternity hospitals, in the magnificent text-books published in every country and in every language, and in the special

societies, such as our own, which have been founded in every large city and in every part of the world. One of the consequences of this active international research, continued now for a good many years, is that almost the last words seem to have been spoken with regard to certain branches of obstetric work, although finality is a somewhat bold term to apply to any department of science, especially when, on this very subject of completion, the oft-repeated falsification of complacent prophetic utterances in the past is remembered. We would do well to follow the example of Levret, of whom a contemporary said, "He confesses himself (for the encouragement of others) but little advanced on the way to excellence: from the stage he halts at, he would have others start for the goal of excellence."

Still, in the knowledge of pelvic deformities and of the mechanism of labour, normal and abnormal, there cannot be much more to learn. The discovery by Tarnier of the axis-traction principle has resulted in our possession of what now appears to be almost perfect forceps, and Baudelocque's statement that the midwifery forceps is the most valuable surgical instrument that has ever been invented is more justified now than ever. To Braxton Hicks we owe the discovery of bipolar version, which has resulted in lowering the mortality of placenta prævia from about 30 or 40 per cent to between 4 and 5 per cent.

The employment of anæsthetics has robbed the pain of labour of much of its terror, and has permitted to a degree once unthought of, the undertaking of operative interference in the interests of both mother and child. The modern Cæsarean section, if performed for pelvic contraction on a healthy woman early in labour, and under moderately favourable circumstances, shows now no greater mortality than that incidental to all major abdominal operations, and is actually less dangerous to mother and child than a prolonged and difficult forceps operation in a late stage of labour.

Another triumph in obstetric art during the last few years has been in the diagnosis and treatment of extra-uterine gestation, and although the last words have not yet been said regarding the etiology, pathology, and early course of this abnormal condition, treatment is nevertheless practically summed up by all gynæcologists now in the phrase—"*Il faut donc les opérer le tout tôt possible, et les opérer toujours.*" Without doubt, recoveries did occasionally occur in the pre-operating days. Nature sometimes does succeed in warding off immediate danger, and even in some instances procures

complete recovery, either by means of the expulsion of the ovum, as an abortion, through the fimbriated extremity of the Fallopian tube into the peritoneal cavity or into the uterus, or by the death and degeneration of the ovum in the tube, the gradual arrest of bleeding, and the ultimate absorption of blood. But the possibility of such a fortunate final result is not now considered to be sufficient warrant for non-interference, since it has been proved that the mortality in cases not operated upon is at the rate of about 70 per cent, whilst at least 80 per cent recover among those women upon whom operation is performed.

The triumphs gained in gynæcological medicine and surgery are so marvellous and so numerous that to merely recite them would require hours, not minutes, at disposal. The treatment of cases of nerve-exhaustion so frequently associated with pelvic symptoms, such as backache, bearing-down feelings, and general weakness, by the method usually known as the Weir-Mitchell—consisting essentially of rest in bed, isolation, massage, and generous feeding—has in thousands of cases produced the most brilliant results. In abdominal and pelvic surgery more striking success has been obtained by the application of the principles laid down by Pasteur and Lister than in any other branch of surgery. Most of the modifications of the older antiseptic methods have, indeed, resulted from the experience of gynæcological operators, notably the introduction of sterilisation and the “aseptic” system, which, when combined with modern instruments and improved technique, have secured the splendid results in gynæcological surgery which are so familiar to all of us.

But while we are conscious that much real and satisfactory progress has been made in our pathological knowledge, and in our means of diagnosis and treatment, and while we are justified in expressing our pride at the evidences of advance on many sides, we are yet never permitted to forget that we still have much to learn regarding disease, and much work to do for its prevention or cure before the obstetrical and gynæcological millennium dawns. One of the most dreaded scourges of the human race, striking down countless numbers of men and women in the prime of life, still defies our efforts to overcome it. Although many maladies at one time believed to be incurable can now be cured, and our patients' lives saved, we still have to admit, sorrowfully, at the appearance of malignant disease, the opprobrium of failure in the majority of cases. To gynæcologists it is only too familiar, on account of the frequency with which it attacks the uterus, and

constantly we are compelled to confess our inability to offer hope of effective treatment and possible cure. It cannot yet be affirmed that any light has been thrown upon the causation of the disease by pathological research, and all theories concerning individual causes have offered no solution of the problem. This is due partly to the fact that, hitherto, research on cancer, as on other subjects, has been left to individual private enterprise. The work, therefore, has been intermittent and sometimes misdirected, from ignorance on the part of workers of what has been done elsewhere, leading to consequent waste of energy.

The scheme for cancer research inaugurated by the Royal Colleges of Surgeons and Physicians of England, along with the corresponding efforts in Germany and the United States, may be trusted to seriously grapple with this pressing problem by the systematic and co-ordinated efforts of a body of specially skilled investigators. Whatever result is obtained in the laboratory must, however, be controlled by clinical observation, for while no line of research which promises the smallest addition to knowledge must be neglected, and while the largest possible scope must be given to investigation, study of the patient and the disease as it appears clinically is of the utmost importance.

Probably most of us have read the brilliant and suggestive address delivered this year in Manchester by Dr. W. J. Sinclair upon "Carcinoma in Women, chiefly in its Clinical Aspects." He urged his conviction that the secret of cancer, as it exists in the body generally, will yet be unravelled and explained by the study of cancer of the uterus. The disease as it occurs in the uterus and surrounding organs is most favourably situated for clinical observation and research; and when, in addition, we consider that it is so frequently met with in medical practice, that all cases have a marked resemblance to one another, that operations are comparatively more easily performed and remedial agents more readily applied than in many other parts of the body, that cases of recurrence and those of non-recurrence after operation can be carefully observed and investigated, we can understand the good reasons there are for laying down the principle that clinical research must really be placed in the first rank, and not behind pathology; for, as Dr. Sinclair says, "we have heard too much of cancer as a neoplasm, too little of it as a disease." To those of us in this Society, composed as it is of practitioners and specialists, all clinicians, not pathologists, these words are full of help, promise, and encouragement. *Our watchword*

with regard to cancer is—clinical observation from the earliest stages of the disease. The practitioners who know the history and surroundings of the patients could, by careful observation and record, together with the assistance afforded by concerted action with others, render invaluable aid in forming conclusions regarding the antecedents of the disease, and many other points as to which each of us has only vague personal impressions, but no certain or definite knowledge. For example, we wish to know the effect upon the production of cancer of heredity, puerperal injuries, marriage, social conditions, and other circumstances; we wish to know whether a patient has more suffering or less in a case in which the disease has been allowed to run its natural course, or in a case in which operation has been performed but recurrence followed, and in many other details we need more definite information which should surely not be impossible to obtain.

The gynæcological surgeon has also much work to do before an ideal standard is reached; but, notwithstanding, there is no reason to give way to the despair and pessimism which have taken possession of not a few able operators. While it is agreed on every hand that the immediate results of vaginal hysterectomy are most satisfactory, the mortality, which at one time was over 30 per cent, having been now lowered to from 3 to 7 per cent, it is declared by some surgeons that the ultimate results of the operation have been so unfavourable that it is worse than useless to practise it. Certainly these remote results, taking together all the varieties of uterine cancer and its different sites, have not been very brilliant; but even these can be proved to be improving, some surgeons having raised the conventional cases—that is, of cases immune for five years after operation—to 40 per cent, and in easy cases to 80 per cent.

One very important point must be noted and emphasised. Cancer attacking the cervix is more readily recognised at an early stage than is cancer of the body of the uterus; but, in spite of this fact, the cervical cancer is far more dangerous than the corporeal. Recurrences come on in case after case after hysterectomy for cancer of the cervix, the ultimate results being most discouraging unless operation is performed at a very early stage of the disease, and unless wide excision is practised. On the other hand, hysterectomy in cancer of the body of the uterus, and especially of the fundal portion, if undertaken in reasonable time, yields results so favourable as to make it the imperative duty of every practitioner to detect the disease in its earliest stages, or at least to recognise its signs.

of warning at a period when hysterectomy would be the ideal operation. Two years ago I read a paper before this Society upon cancer of the body of the uterus, in which I fully detailed the initial signs and symptoms, and pointed out the urgent necessity of their early recognition which devolves upon every practitioner. I may, perhaps, add that the patient upon whom I had performed vaginal hysterectomy, and whose case formed the text of my paper, is still, more than two and a half years after the operation, alive and well.

The day must certainly dawn in which the solution of the great problem of the origin of cancer and the means for its prevention shall be discovered. It will be solved, we may be sure, not as the result of some lucky guess or sudden inspiration, but by the sustained efforts, the combined power, the infinite patience, of earnest workers of all branches and of all classes of our profession. But at present we can only treat, and aid, and soothe our patients with courage and to the best of our powers, and we must decidedly and strenuously negative any assertion that operation in cancer is never justified. We must not regard cancer as a constitutional disease, or allow patients or their friends to remain in the popular belief that to remove it in one part is useless, since it will break out in another. We can assert with truth that cancer is a purely local disease, and certainly infective, and as unbiassed observers and students are forced to the only honest conclusion that we must promptly and intelligently remove all diseased tissues wherever we discover them, unless they are manifestly beyond our reach, for the hospital records of the whole world testify to the value of early and radical operation. Cancer is a terrible and loathsome disease, and so prevalent that there are believed to be at any time 8,000 women—probably a great many more—suffering from uterine cancer in the United Kingdom; and, although we must admit sorrowfully that our failures to overcome it are only too numerous and too manifest, yet we must not abandon in despair methods which have afforded amelioration of suffering in many cases, exemption from local recurrence in many others for from two to five years, and permanent cure in a proportion which must inevitably grow larger the more early the disease is diagnosed and the more thorough are the means of operation.

There are, of course, other problems in gynæcology still waiting solution, and many other details of treatment still requiring to be perfected, but it is impossible to enter into their consideration, or even to merely mention them.

When we turn to obstetrics, we find that so much good and

permanent work has been done already that practically every emergency and complication of labour can be successfully treated, with the one exception of eclampsia, and that the remaining unsolved problems—such, as the function and destiny of the corpus luteum and the relation of menstruation to ovulation—are more academic than practical, and will probably be answered in the laboratory or by means of the study of comparative physiology. But, in spite of all the knowledge into which we have come into possession, and notwithstanding all the means at our disposal for rescuing women out of the most serious dangers of childbirth, it is an opprobrium to us that the mortality is still so disappointingly large, from a condition in which, unlike the disease which we have been considering, there is no mystery as to causation, and which has been proved to be almost wholly preventable. The Registrars-General in their reports show that the mortality from puerperal infection has not appreciably diminished from what it was many years ago, and that, unfortunately, we are still far from that promised stamping-out of it which it was anticipated about twenty or thirty years ago, would have come by this time, reckoning as had been done upon the success of the antiseptic system in general surgery, together with the improvements in the treatment of tedious labour. Of course, enormous advances have been made during the last fifty years in our knowledge of the causation and prophylaxis of sepsis in the puerperal period. In 1852—exactly fifty years ago—the Professor of Obstetrics in the University of Philadelphia, Dr. Hugh L. Hodge, published an essay *On the Non-contagious Character of Puerperal Fever*, and, in 1854, there appeared a similar contribution to the subject from Dr. Meigs, Professor of Midwifery in the Jefferson Medical College, Philadelphia. An extract or two will suffice to explain their views, which were those of many others at the same dates. “The result of the whole discussion will, I trust, serve not only to exalt your views of the dignity and value of our profession, but to divest your minds of the overpowering dread that you can ever become, especially to woman, under the extremely interesting circumstances of gestation and parturition, the minister of evil; that you can ever convey, in any possible manner, a horrible virus, so destructive in its effects and so mysterious in its operations as that attributed to puerperal fever.” So said Hodge. And, in even wilder folly, Meigs asserted—“I prefer to attribute them (the deaths) to accident or Providence, of which I can form a conception,

rather than to a contagion of which I can not form any clear idea, at least as to this particular malady." Fortunately, however, there were other men at this time who were less foolishly credulous, and more scientifically sceptical and critical, and the names of Semmelweis and James Y. Simpson must ever be held in grateful remembrance by all obstetricians for the great and beneficent work they performed in recognising the true nature of puerperal infection, and in propagating their views abroad in spite of all opposition. The far-reaching vital results of the observations of Semmelweis in particular will ever remain to glorify his name. Later, the scientific principles enunciated by Pasteur and Lister produced methods of antiseptic and aseptic treatment which have saved the lives of countless mothers and their children. The records of hospital practice throughout the world have furnished the most remarkable and striking results, exactly as like results have occurred in surgical wards everywhere in which strict antiseptic and aseptic methods are employed. Among many notable examples, we may take that of the New York Maternity Hospital, in which the mortality statistics before and after the introduction of these methods show the diminution of mortality. For nine months in 1883 there were 447 deliveries and 30 deaths, being at the rate of 6·71 per cent; in 1885—after the new treatment was introduced—there were 537 deliveries and 3 deaths, none of which were from sepsis, giving a percentage mortality of only 0·56. It is unnecessary to relate the statistics of other maternity hospitals, for all tell the same tale—that puerperal mortality can be brought almost to a vanishing point, and that sepsis can be absolutely abolished by a scrupulous observance of the rules of asepsis.

The results in private practice are very different, as we shall see, but before treating of this let us remember that there is necessarily a vast difference between treating patients in hospital and treating those of a similar class in outside practice. It is very difficult for the practitioner among the poor to act as he ought, or would like, to act. He is overworked and badly remunerated, and engaged in constant daily and nightly struggle against the laziness, dirtiness, and stupidity of his patients, and his own necessities to treat erysipelas, septic wounds, and other similar conditions, perhaps in the same hour that he attends a confinement. Still, there is no doubt that if he would conscientiously carry out a routine practice, and do so persistently, there would be fewer cases of puerperal infection, and by example and precept the education

of the patients and their attendants would be furthered, and they would be taught the value of this truth—that, in the vast majority of cases, childbed fever is due to the introduction of infectious material into the woman's system through unclean clothes, hands, or instruments.

It must not, however, be thought that I am speaking in such a manner as to suggest that every death at the puerperium can be avoided, or is inevitably due to carelessness or stupidity on the part of the attendant. So long as pregnant women may be, and frequently are, the subjects of grave organic disease of the heart, kidneys, or lungs, so long as sunless, airless dwellings and improper feeding aid in breeding a race of rickety and deformed children, so long as intemperance in alcohol wrecks and leaves in ruins the house of life and syphilis works its ravages on innocent mother and unborn child, and so long as other vices, follies, and inherited diseases are perpetuated among all classes of society, so long must the puerperium be a period fraught with special dangers to women. But still; when all is said, the incontrovertible fact yet remains, that in hospitals where the most badly fed, housed, and clothed, the most degenerate and deformed, are treated, the death-rate from puerperal infection has almost vanished, while in private practice, in which in most cases the physical condition of the patients is much better and the standard of health higher, the death-rate is deplorably large.

In 1847, the Registrar-General first issued a separate return of the deaths during the puerperium, and the obstetrician who soon afterwards drew the attention of the medical profession to the serious condition of affairs which had been revealed was Sir James Simpson, who, in 1851, said, "When it was remembered that about 3,000 women still died in childbirth in England and Wales alone every year, and that a large proportion of these 3,000 deaths were from puerperal fever, he need not make any further observation on the importance of studying the means of prevention in such a fatal and formidable malady." Since these days, what Simpson desired—means of prevention—have been thoroughly and ably studied, and have become so perfected, and can be applied to such good purpose that, as we have seen, in hospital practice the death-rate from sepsis has almost disappeared.

But the reverse side of the picture is revealed by a glance at the returns since 1851. It would occupy too much space to tabulate all of them, and, in any case, we shall find enough food for reflection if we take only the last five years for which the reports are compiled—1896 to 1900 inclusive—when we

discover that the 3,000 deaths in England and Wales in Simpson's day have increased to 4,455 for 1900.

Year.	Puerperal Fever—Deaths.	Other accidents of childbirth.	Total.	Taken together, per 1,000 births.
1896	2,053	2,508	4,561	4·98
1897	1,836	2,414	4,230	4·61
1898	1,707	2,367	4,074	4·41
1899	1,908	2,418	4,326	4·66
1900	1,941	2,514	4,455	4·81

In Scotland, for the same period of five years, the figures are as follows. It may be noted in passing that the term "puerperal fever" is replaced in the Scottish report by that of "septic diseases," a change of title which is an improvement and which has much to commend it.

Year.	Septic diseases.	Other diseases of parturition.	Total.
1896	220	357	577
1897	205	331	536
1898	227	351	578
1899	214	341	555
1900	225	342	567

When we add together the deaths registered in England, Wales, and Scotland as resulting from septic diseases and accidents of childbirth, we find the appalling total of 5,132 in 1896, 4,786 in 1897, 4,652 in 1898, 4,881 in 1899, and 5,022 in 1900, making altogether in five years a mortality record of 24,473 women who have perished in giving birth to their children, and at ages when their lives were most valuable to their families and to their country.

It cannot be asserted that these figures exaggerate the death-rate of the puerperium, and although I am not a great believer in the value of statistics in general, as presented, for example, in surgical records, and while I believe that a man who can manipulate figures skilfully and is not troubled with a sensitive conscience can prove almost anything he desires, I am yet convinced that in this instance the figures understate the number of deaths. It must also never be forgotten that in thousands of cases of childbirth there is puerperal infection of which the patient does not die, but yet has serious damage done to her pelvic organs from which she may never recover,

and from the evil effects of which she undergoes much suffering for years. Every hospital surgeon is familiar with innumerable cases of ovarian, tubal, endometrial, peritonitic, and other diseases due to septic processes set up during or after childbirth or miscarriage.

With our minds still charged with memories of the great war through which our empire has fought, and which has ended in this eventful coronation year, we may discover a fitting comparison between it and puerperal infection. Just as in the war they were not the aged, the useless, nor the sickly who were cut down, but the young, the wealth-earning, and the vigorous; so deaths in childbirth occur necessarily among women in their youth or prime, and when their lives are of the utmost importance, socially and nationally. And just as the long lists of wounded revealed that to multitudes of our soldiers life would be never the same again, but that they would require to journey through it as best they could, disfigured, maimed, and crippled, so puerperal sepsis leaves behind it in too many cases a lengthy trail of suffering and misery, ill-health and sterility.

This large mortality and morbidity must, therefore, be considered as serious as well as sad and disappointing, and we must ask ourselves what are their causes and what measures can be undertaken to lessen them. As to causation, I am sure that in many cases the untrained attendants who are in sole or partial charge in so many thousands of cases are blameworthy. The Midwives Bill, which was passed in July, seeks to remedy this state of affairs in England. There are between 10,000 and 15,000 women in that country practising as midwives, and they are believed to attend annually about 450,000 cases to which no doctor is called, and yet there is absolutely no qualification test—no guarantee that they are fit for the duties they undertake. They may be drunken, dirty, and ignorant, but yet can call themselves midwives, and practise without let or hindrance. The Bill seeks to affirm a principle of which it is difficult to see any reason why it should have met with opposition from medical practitioners; it is, that in order to secure proper knowledge and training on the part of midwives, and a guarantee of their good character, some kind of certification and registration should be required. There can be no doubt that in a very few years the beneficial effects of such a measure shall be very evident, though unqualified midwives at present practising are to be very tenderly dealt with, as the penal provision is directed against those women who, after 1st April, 1910, "shall habitually and for gain"

attend cases of childbirth, and those who, after 1st April, 1905, use the title of midwife, unless duly certified under the Act.

It would not be just or correct to saddle the whole of the responsibility for the prevalence of puerperal infection upon the midwife. The medical profession must bear its share, and must do so for several reasons, the first of which strikes at the very root of the evil, and it is the imperfect training in obstetrics which the medical student receives. We all know that far too few labours are attended in student days, and that there is a want of systematic practical instruction. The student is not obliged to attend regularly the practice of a teacher in a maternity hospital, and in that branch, which is the most important in general practice in either town or country, he is not so well taught in a practical fashion as he is in medicine or surgery.

This concerns very seriously all classes, the rich as well as the poor, on whom these students will attend later on as practitioners; for if they are imperfectly equipped for the important duties which they should discharge towards the community and the individuals who compose it, both the community and the individuals, rich and poor, must suffer.

Again, the unskilful and unwise use of the forceps, and the neglect to repair injuries of the soft parts immediately, are fertile sources of puerperal infection. The discussion of these points would lead me too far afield at this hour, and I would merely say that the longer I practise obstetrics the more convinced do I become that in an ordinary lingering first stage of labour we must not be nervous or impatient, and that we must disregard—as being dangerous and untrustworthy guides—the anxiety of the patient for a speedy delivery and the suggestions of the friends, and, more especially, we must never consult our own convenience or consider our own weariness. Later on, if in the second stage there is delay, we should interfere only when we are absolutely assured, as far as our judgment can guide us, that more advantage is to be gained by our interference than risk is to be run by waiting.

There is no instrument more valuable than the forceps, which has been the means in innumerable cases of shortening the duration of a tedious and ineffective labour, and, consequently, of lessening the danger to the mother and child; but it must never be forgotten that in over 90 per cent of instances no meddling with nature's efforts is required, nor that when we do interfere that we should do so with as much careful attention to asepsis as if we were about to perform a major abdominal operation.

If, unfortunately, any link in our chain of preventive measures has weakened or snapped, and puerperal infection has begun, it is our duty to at once recognise the mishap and remedy it. Often too much precious time is wasted at the onset. It is fondly hoped that the elevated temperature and quickened pulse may be explained by some of the stock reasons which have done duty so long and are so fallacious. But it should no longer be believed that a temperature of 100° F. on the second or third day can be due to a "chill" or the secretion of the milk. Perhaps it may be, though I do not think so, and it ought to be regarded as a thousand times safer to look upon it as indicative of poisoning, and to act at once. It is impossible to diagnose with certainty between sapræmia and septicæmia, and even though many cases of the former condition recover naturally, it is not safe to trust to the chance of this happy ending. Early recognition and prompt treatment, then, are all-important if we wish to rescue women from the perils of puerperal infection.

There are social and political questions bound up in this subject on which I had hoped to touch, but it is impossible to do so. Many measures could be adopted which would help to diminish the mortality at the puerperium, whether due to puerperal infection or to indirect causes, as insanitary surroundings and environment, overcrowding, intemperance, vice, and poverty. But when scientific knowledge is more diffused through all classes, and it is more clearly recognised that the true wealth of a country consists in the health, vigour, and happiness of its inhabitants, a brighter day will then have dawned for parturient women.

I must reluctantly leave almost untouched some other questions in which we, as obstetricians and gynæcologists, are deeply interested, and which vitally affect the well-being of the nation, such as, for example, the birth-rate, which for many years has been declining rapidly. The latest returns show that, even in a very few years, the decrease is astonishing. In 1895 the rate was 30·2 per 1,000; in 1900, 28·7—a decrease of nearly 2 per 1,000 in five years.

Mr. T. A. Welton, at a meeting of the Royal Statistical Society in June of this year, pointed out that the census of the City of London showed that there were 164,000 fewer children under 15 years of age in 1901 than would have been if the rates of 1891 had been maintained; the rate of annual births to every 100 married women under 45 years, which was 28·3 in 1880-1881, had fallen to 23·6 in 1900-1901—the difference equalling 26,000 births yearly. In England and

Wales the same rate fell between 1880-1881 and 1900-1901 from 30·3 to 25·8—the difference representing about 139,000 births per annum.

I am not, however, unmindful of the fact that, as Geddes and Thomson indicate in their clever and suggestive work on *The Evolution of Sex*, “the survival of a species or family depends not primarily upon quantity, but upon quality. The future is not to the most numerous populations, but to the most individuated.” In effect, it is better to have a smaller but healthier and more vigorous population in this or any country, than a larger one physically and mentally degenerated on account of overcrowding, vice, and poverty.

Bound up with this question of declining birth-rate is the still appalling infantile mortality, which is also growing to be a matter of national importance, and demands serious consideration. Taking the case of Glasgow as an example, we find that the estimated number of living children under 5 years in 1901 was 96,949, and the deaths under 5 years were 6,457, giving a percentage of 40 to the total deaths in that year. The number of infants dying under one year was 3,602, which represents a death-rate of 149 per 1,000 born. It is surely evident that it is the duty of the State or municipality, or, indeed, any local authority, to see that the infants of the poorer classes are cared for and nourished from their earliest moments, and protected from the factors which tend to undermine the constitutions and lay the foundations of the puny physiques of so many thousands in our great cities. Doing this would surely pay much better in the long run, in money, in increased happiness, in national efficiency, than in burdening ourselves compulsorily with costly hospitals, asylums, poorhouses, and gaols, in which so many men and women, whose lives have been wrecked from infancy by neglect and ignorance, require so often to be housed and maintained during their adult years, when hope of improvement must be almost abandoned as impossible.

I must not, however, air any socialistic theories or raise any political questions in an academic meeting such as this, strong as is the temptation to do so, though I must confess that I have frequently thought that we, occupying as we do positions of trust and responsibility as advisers of people of all classes, could, if we cared to do so, bring influence to bear upon them which would exert enormous political force. I believe that it is our duty to exercise this influence in all matters of reform which would tend to increase the national well-being. For, after all, we have no other ambition than to

further the well-being of mankind, to advance the race of which we are individuals, and to destroy or oppose everything which militates against the progress of the nation. Our aims are to prevent and relieve suffering, to leave our generation wiser and better than we found it, and, by our investigations and work, to build up our science so that, as the stately centuries roll on, they may be filled with ever greater knowledge and with ever more abounding usefulness, each age helping on, with its successes and failures, the one which is next to follow.

In the Utopia of which all of us dream at times, when we have left awhile the garish light of every day for "the light that never was on sea or land," we weave our fancies around a country in which the column of Truth as it left the Olympian gods has been at last reconstructed and restored. That Utopia, we know, can never be realised in this world, but, nevertheless, it is worth striving for even here and now. And although the ancient aphorism is as true to-day as it was centuries ago—that life is short, art long, the occasion fleeting, experience fallacious, and judgment difficult—still every honest worker, especially when he concentrates his efforts along with those of others, may help to add a fragment, however small, to the column of Truth and Harmony which shall be reared sometime, somewhere, when there have come at last the

"One law, one element,
And one far-off divine event
To which the whole creation moves."

It may appear a descent to the commonplace to argue from this figure the value of a medical Society such as this; but, in sober reality, only by each member of our profession submitting his fragments of thought or experience for examination, criticism, and adjustment can any permanent addition be made to the column of Truth, in the doing of which, moreover, as well as in steady and regular attendance at the meetings, incalculable benefits accrue to ourselves. Allow me, once more, to repeat that it is to me a source of pride and satisfaction to be the President of the Society, and I sincerely trust that during this session we shall achieve good work, and ever keep steadily in view the highest ideals.

CASE OF DIPHTHERIA COMPLICATED BY ACUTE
ENDOCARDITIS OF THE MITRAL VALVE.¹

By JOHN WAINMAN FINDLAY, M.D.,

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It will be seen that before suffering from this attack of diphtheria my patient had a somewhat eventful history. She has always been a delicate child, and, after being weaned, in November, 1897, she suffered from "congestion of the lungs." In April of 1898 she was very ill with a distinct attack of pneumonia (lobar); in June of 1899 she had a second attack; and in May of 1900, during the course of whooping-cough, she had a third attack of pneumonia. In July of 1901 she had measles, but has had neither scarlet fever nor rheumatism. Between and since these definite attacks of pneumonia she has several times suffered from "congestion of the lungs," by which is meant an illness of a bronchitic or broncho-pneumonic nature. On several occasions she has been ill with acute follicular tonsillitis, and on 24th November, 1901, I removed, under chloroform, tonsils, and also adenoids from the naso-pharynx, as the child had become a mouth-breather, and neither spoke nor heard properly. The child's health and condition every way were considerably improved by this operation, and she required less of the doctor than she had done for some time till 2nd June of this year, when I was called to attend her for the illness under consideration. She was then 6 years old.

In the morning the child was peevish, could take no breakfast, and complained of pain in the left ear, and also of pain in the throat when she tried to swallow. Her mother examined the throat, and observing something there, sent for me. I found the tonsils and fauces congested, and saw over the left tonsil a number of little yellow points, which in places showed a tendency to run together. Temperature was 102°; pulse, 116; and respirations, 24. The bowels had not moved for two days, and the tongue was thickly covered with a white coating. Lungs and heart were examined, and nothing abnormal was observed, it being specially noted that the apex beat was well inside the nipple line. Frequent

¹ Read at a meeting of the Glasgow Eastern Medical Society, held on 5th November, 1902.

brushing of the throat with a solution of carbolic acid and glycerine (3 per cent) was ordered, likewise a purgative, frequent sponging with tepid water, and the child was put on milk. The case was considered to be one of follicular tonsillitis.

On 3rd June the condition in the throat was much the same; the secretion could be brushed off from the tonsil though some bleeding was caused in doing so. Temperature, 101° in the morning. On 4th June the temperature in the morning was 100° , and a sloughy patch was seen over practically the whole of the left tonsil.

On 5th June I found the lymphatic glands at the angle of the jaw on the left side, enlarged and tender, and the child herself complained much of pain in the left ear. Covering the entire surface of the left tonsil was a yellowish membrane, like wash-leather in appearance, and this seemed to have a tendency to spread beyond the confines of the tonsil, and could just be detected at its upper limit on the free edge of the soft palate. No enlargement of the liver or spleen was made out. Morning temperature was 101.4° ; pulse dicrotic, and 120 to 134 per minute; respirations, 24 to 28. In the late afternoon, Dr. R. M. Buchanan, the city bacteriologist, reported that diphtheria bacilli had been found in a film prepared from a throat swabbing. That same evening (temperature 102°), one tube (2,000 units in 5 c.c.) of diphtheria antitoxic serum was injected under the skin between the scapulæ.

6th June.—Temperature in morning, 100.4° ; in evening, 101.6° ; pulse, 120 at both times; and respirations, 24 and 26. In the morning the membrane seemed to be stationary, exactly as it had been seen the night before, but in the evening the smallest yellow speck, little larger than a pin's head, could be seen on the right tonsil.

By the morning of 7th June this little speck had attained the size of a pea, and the membrane from the left tonsil had further encroached on the soft palate and was now also present on the left side of the uvula. In the afternoon another tube of antitoxic serum (2,000 units in 5 c.c.) was injected under the skin of the left flank. A report was received from Dr. Buchanan, confirming the presence of the bacillus diphtheriæ by culture. Morning temperature was 100.6° ; evening, 102.2° ; pulse still off and on about 120; and respirations from 24 to 28.

On 8th June the membrane was observed to be breaking down on the left tonsil, but was distinctly larger on the right, the latter of the tonsils to be affected. Pulse continued rapid,

120, and regular. Temperature, 99·8° morning, and 101° evening.

On 9th June the membrane was still present, but scattered. Temperature, 99° morning, and 100·6° evening; pulse, 120.

On 10th June there were only sloughy-looking ulcers to be seen on the tonsils. Temperature in the morning, 99·4°; pulse, 120.

11th June.—The glands in the left neck were not now so much enlarged, and for the first time during the last four nights the child had slept without wakening. The three nights previous to last night she had cried a good deal with the pain in the left ear. Temperature was 98·6° and pulse 120. At every visit the heart and lungs had been examined, and for the last day or two the apex beat had appeared somewhat diffuse and farther out than formerly, and the first sound at the apex also had had a muffled and blurred character, but no murmur had been detected. On this, the tenth day of illness, the cardiac pulsation was found to be somewhat diffuse in the fourth and fifth spaces, the farthest out definite point of pulsation being in a line with the nipple. The cardiac dulness was bounded above by the third rib, on the left by a line passing through the nipple, and on the right by the right edge of the sternum. At the apex was a well-marked V.S. murmur, soft and long, following and in part replacing the first sound. It was best heard at the apex, could be followed into axilla and round to scapular angle, was not detected at the lower sternum, but could be heard, though indistinctly, at the base, and better at the aortic than at the pulmonic area. After this date no abnormality of temperature was recorded. The pulse slowed down to 100 and later on to 96, and only once—viz., on 17th June—was any irregularity of the pulse noticed; on this day the rate was 108. The cardiac condition remained practically the same till I ceased attending her on 24th June. By 15th June the throat was healed, and by the 17th the enlarged glands already mentioned were no more than felt. Never at any time during the course of her illness was albumen detected in the urine.

On 30th July I examined patient, and found a fairly punctuate apex beat in the nipple line and a well-marked V.S. murmur as before.

On 13th November I again saw this patient, and found a forcible and somewhat diffuse cardiac pulsation in the fifth space, in or just outside the nipple line. The left border of cardiac dulness I placed a little further out than formerly, being now, I thought, outside the nipple line. The right

border coincided with the right edge of the sternum, while the upper border was in the second space. At the apex I heard a loud and long V.S. murmur, entirely replacing the first sound; this murmur could be traced through the axilla to the angle of the scapula. A faint V.S. murmur could be heard at all the other cardiac areas following the first sound, and the second pulmonic sound was accentuated. There was no enlargement of liver or spleen, and no œdema. Her mother, however, informed me that she is easier "puffed" and tired out than she used to be, and is more readily excited. She was very much agitated while I was counting her pulse, which numbered 120, the respirations being 24.

Historical and Bibliographical.—Endocarditis as a complication of diphtheria appears to be very rare indeed; so rare, in fact, that its occurrence is denied by many observers. The few references I have been able to cull from medical literature are of comparatively recent date, which is perhaps not to be wondered at when we find that Bretonneau¹ knew nothing of cardiac complications, and that Jenner and Tanner² in this country, and Trousseau³ on the continent, have been credited with being the first to draw attention to heart-suffering in diphtheria.

In Reynolds' *System of Medicine* (1870), Sibson makes no mention of diphtheria as an etiological factor in endocarditis, and Squire also does not refer to endocarditis as a possible complication of diphtheria.

Bouchut⁴ in 1872 writes: "In the majority of children who die of diphtheria and septic diseases, the valves and the muscle of the heart are involved. We find all the characteristic signs of myo- and endocarditis with small deposits of discoloured fibrine more or less adherent. The edge of the mitral and tricuspid valves is red, thickened, swollen, and covered with irregularities, which are occasionally of some size. Similar changes are found along the edge and the base of the sigmoid valves, though they are here somewhat less common."

In 1873 Labadie-Lagrave,⁵ Bouchut's assistant, published a treatise in which the above quoted opinions of Bouchut

¹ Bretonneau, *Memoirs on Diphtheria* (1821-1855), New Sydenham Society, 1859.

² Jenner and Tanner, *The Science and Practice of Medicine*, Wm. Aitken, 1863, vol. i, p. 572.

³ Trousseau, see Doebelin's *Dissertation*, p. 6.

⁴ Bouchut, *Gazette des hôpitaux*, 1872, p. 117.

⁵ Labadie-Lagrave, *Sur les complications cardiaques du croup et de la diphthérie*, 1873.

regarding the extraordinary frequency of cardiac diseases, and especially of endocarditis, in diphtheria (in 95 per cent) were supported and confirmed. In 1874 J. Parrot¹ offered a criticism of the afore-mentioned works, and gave it as his firm conviction that, with one exception, none of the cases described by Bouchut and Labadie-Lagrave showed any evidence of inflammation in the endocardium. "Their mistake," he declared, "arose from the circumstance that they had not a sufficient acquaintance with the normal conditions of the cardiac valves, or at least that they had not such with the appearances of the valves in children." Further, Parrot says that "Cadet de Gassicourt² expressed the decided conviction that the roughening of the tips of these valves does not have an inflammatory origin, but is an anatomical peculiarity which originates in the foetal development."

Leyden³ in 1882 considered an endocarditis after diphtheria as illusory. In the same year Kirkland⁴ reported the case of a woman, in whom a mitral systolic murmur showed itself during the course of diphtheria, and was still detectable over the left ventricle a few years afterwards. In the case of a boy, aged 8, who recovered from diphtheria, Kirkland observed, in about a fortnight after the seeming convalescence, the development of paralysis of the palate and lower extremities, coincidently with the appearance, for the first time, of a soft apical systolic murmur. In spite of treatment, about a week after the oncoming of these symptoms, the boy, while trying to rise in his mother's arms, "went off in a faint and died." No *post-mortem* examination was obtained, so we have no—or but insufficient—proof of endocarditis, as Kirkland himself admits, and to my mind this case seems to belong rather to the group attributed to cardiac paralysis or myocarditis.

Chaffey,⁵ in 1887, found marked fibrinous deposits (probably *ante-mortem*) in the cavities of the heart in more than one half of the diphtherial cases (23 in number) he examined. In the only instance in which a distinct *bruit* was heard during life, the fibrinous deposit in the heart was regarded as *post-mortem*. Clebsch,⁶ too, in 1887, though able to collect within

¹ J. Parrot, *Archive de physiologie*, 1874, vol. ii, p. 1.

² Cadet de Gassicourt, quoted by J. Lewis Smith, in Keating's *Cyclopædia of the Diseases of Children*, 1889, vol. i, part ii, p. 641.

³ Leyden, "Ueber Herzaffectiionen nach Diphtherie," *Ztschr. f. Klin. Med.*, 1882.

⁴ R. Kirkland, *British Medical Journal*, 1882, vol. ii, p. 1205.

⁵ Chaffey, *British Medical Journal*, 1887, vol. ii, p. 121.

⁶ E. Clebsch, "Ueber Herzerkrankungen bei Diphtherie," *Inaug. Diss.*, Göttingen, 1887.

six months, from the cliniques of Ebstein and Damsch, twenty cases of cardiac disease—thirteen of pericarditis and seven of disordered action of the heart—which he considered traceable to diphtheria, did not once observe the occurrence of endocarditis. In only one of these cases, however, did a medical man see the throat while the patient was suffering from *diphtheria*, and further doubt is thrown on the authenticity of his cases by detecting, in the notes he gives, very strong evidence that the most common of all causes of cardiac disease—rheumatism, was in several instances at work. Clebsch, however, states that Monti ("Ueber Croup und Diphtherie im Kindesalter," Wien) declares that he has seen two cases of endocarditis after diphtheria; further, Bridger reports one case in which the symptoms were pain in the precordial region and a systolic murmur; the diagnosis of endocarditis was confirmed *post-mortem*.

Henoch,¹ in 1889, asserts that the endocardium never presents any alteration worth speaking of, save perhaps small ecchymoses. "In particular, endocarditis, which Bouchut and Labadie-Lagrave considered to be almost invariably present, was never found in any of our cases." J. Lewis Smith² concludes that diphtheritic endocarditis is extremely rare in the experience of both the pathologist and the clinician. Sanné is quoted as saying, "My personal investigations are absolutely negative. Observations of diphtheria, to the number of 149, taken in these later years have not furnished a single case of endocarditis. I should fear to express myself in such a positive manner if I should trust to the single testimony of my senses; but a large number of these cases were auscultated by Barthez and by D'Espine and Gombault." Still in 1889 we read that Doeblin³ regards endocarditis as an all but unproved complication of diphtheria, and he considers that when there is trouble in the heart it is of the nature of a myocarditis. He mentions that Eberth and Köster had drawn attention to a form of endocarditis which could be diagnosed from the diphtheritic deposit on the endocardium. In these deposits the same fungus forms were found as had been already demonstrated in the exudations on the mucous membranes. Further, it is said that Zit had twice observed a

¹ E. Henoch, *Lectures on Children's Diseases*, New Sydenham Society, 1889, vol. ii, p. 293.

² J. Lewis Smith, *Keating's Cyclopædia of the Diseases of Children*, 1889, vol. i, part ii, p. 641.

³ S. Doeblin, "Ueber die Einwirkung der Diphtherie auf das Herz," *Inaug. Diss.*, Berlin, 1889.

fresh endocarditis, simultaneously with the exudative processes in the throat. In one case, which came under observation with an exudative pharyngo-laryngitis, Zit found clumps of micrococci in the fresh deposit on the mitral valve.

Sidney Phillips,¹ in 1890, in a paper entitled "Some Dangers connected with the Circulatory Organs in Diphtheria," says "endocarditis in all probability was never a result of diphtheria, though murmurs might be produced by dilatation or anæmia."

In 1898, Osler² makes no mention of endocarditis in connection with diphtheria, while Dreschfeld,³ in the same year, informs us that "acute endocarditis may be associated with the zymotic fevers; and, while common in scarlet fever, it (endocarditis) is a very rare complication in typhoid, measles, small-pox, diphtheria, or malaria." It is asserted by Stengel,⁴ as well as by many others, that in any case of suppuration or infectious disease, endocarditis is a possible complication. Broadbent,⁵ however, only cites "scarlet fever, pneumonia, small-pox, measles, and enteric fever." Stengel also states that, among micro-organisms less frequently detected in the vegetations of endocarditis is the bacillus diphtheriæ, though Herringham⁶ declares that, "if endocarditis and pericarditis ever occur as a result of diphtheria, they are probably dependent on micrococci."

Considerations and conclusions.—We have here a case, then, in which the heart of a child had been repeatedly examined during several years, and always found to be normal, and in which a murmur was detected for the first time during an attack of diphtheria. That the murmur is organic is shown not only by its character and distribution, &c., but also by its persistence; and, consequently, we must conclude that, somehow or other, this attack of diphtheria caused in June last an acute endocarditis of the mitral valve.

As such a condition is so very rare, let us for a moment enquire if this patient could have had at any time any disease that was likely to have caused endocarditis. Apart from two or three attacks of tonsillitis, rheumatism, or anything that

¹ S. Phillips, *The Lancet*, 1890, vol. i, p. 1126.

² W. Osler, *The Principles and Practice of Medicine*, 1898.

³ J. Dreschfeld, "Endocarditis," in Clifford Allbutt's *System of Medicine*, 1898, vol. v, pp. 863, 864.

⁴ Stengel, *Text-Book of Pathology*, 1899, p. 352.

⁵ Sir W. Broadbent and J. F. H. Broadbent, *Heart Disease*, 1900, p. 17.

⁶ W. P. Herringham, "Diphtheria," Clifford Allbutt's *System of Medicine*, 1896, vol. i, p. 739.

could, by the greatest stretch of imagination, or diagnosis, be termed rheumatism, she has never had. Her father has never suffered from rheumatism, though her mother once had what she calls "rheumatism in the muscles of the back." The child's maternal grandfather is afflicted with "chronic rheumatics," but, so far as I can learn, none of her people—brothers, sisters, uncles, aunts, cousins, &c., &c.—ever had an attack of acute rheumatic fever, nor have any of them suffered from cardiac disease. She has never had scarlet fever, the only infectious diseases she has suffered from being measles and whooping-cough. Neither during the course of the diphtheria nor afterwards was there the slightest ground for suspicion that there had been a coincident scarlatina, as we know to be not altogether uncommon. She has three times been the subject of distinct pneumonia, and, on several occasions, has had attacks of "congestion of the lungs." Even were I to allow, then, for the sake of argument merely, that this murmur did not develop during the attack of diphtheria, we see that the only other causes that might have been at work prior to the diphtheria, and apart from the tonsillitis, were measles and pneumonia, and endocarditis as a complication of these diseases seems to be almost as rare as after diphtheria.

Since endocarditis in the course of diphtheria has been so rarely detected clinically, we would not expect to get much help from bacteriology and pathology; yet Stengel tells us that, among the micro-organisms less frequently found in the exudations on the valves is the bacillus diphtheriæ, and at least two observers, Bridger¹ and Zit,² have demonstrated by *post-mortem* examination the presence of endocarditis, accompanying what they regarded as diphtheria.

According to Muir and Ritchie,³ "the bacillus of diphtheria occurs only locally in the false membrane and in the fluids of the mouth, and does not invade even the subjacent tissues to any extent. Occasionally, a few bacilli have been detected in lymph glands. As Löffler first described, they may be found after death in pneumonic patches in the lung, this being a secondary extension by the air-passages. They have also been occasionally seen by various observers in the spleen, liver, and other organs after death. This occurrence is probably to be explained by an entrance into the blood stream, shortly before death, similar to what occurs in the case of other organisms, *e.g.*, the bacillus coli communis." Still, we cannot altogether

¹ Bridger, quoted by Clebsch, p. 7.

² Zit, see Doebelin's *Diss.*, p. 9.

³ Muir and Ritchie, *Manual of Bacteriology*, 1899, pp. 358, 359.

exclude the probability of the diphtheria bacillus reaching the mitral valve and setting up an endocarditis. All we can say is that the presence of diphtheria bacilli elsewhere than in the membrane is highly exceptional; nevertheless, Klein,¹ after subcutaneous injections of bacilli diphtheriæ in cows, found that a vesicular eruption appeared on the teats of the udder, the fluid in which contained bacilli diphtheriæ. It is interesting to note, though perhaps little importance attaches to it, that before the Klebs-Löffler bacillus had been properly accredited as the causative agent in diphtheria, Eberth and Köster² found in the endocardial vegetations "the same forms of fungi" as had been already demonstrated in the diphtheritic deposits on the mucous membranes. On the other hand, Zit,³ in one case which came under observation with an exudative pharyngo-laryngitis, found clumps of micrococci in the fresh deposit on the mitral valve.

Letzerich,⁴ too, observed in diphtheritic cardiac muscle bacteria and cocci in great numbers, inside and outside the *sarcolemma* of the muscle fibre. The contractile substance was fragmented, and between these individual pieces large colonies of micrococci were visible. Further, we are told by Doebelin that Rosenbach⁵ inoculated rabbits with human diphtheritic cardiac muscle, and out of eighteen experiments obtained decided evidences of myocarditis eight times, and he concluded that the diphtheritic contagium penetrates in sufficient quantity to the heart muscle to set up an inflammation there. Now, eight successful results out of eighteen tries is a very remarkable proportion; still, I rather fancy that our present-day bacteriologists would not seriously consider such crude experiments as proving the point at issue. Nevertheless, the noteworthy fact about these observations of Zit and Letzerich is that cocci and not bacilli were the organisms found.

I only know that diphtheria bacilli were present in the throat of my patient, and neglected to ascertain what, if any, were the accompanying organisms. "Though sometimes present alone in the membrane, the bacillus diphtheriæ is more frequently associated with some of the pyogenic organisms—*streptococcus pyogenes*, *staphylococci*, and occasionally the *pneumococcus*."⁶ But these are just the very organisms that

¹ Klein, *Ibid.*, p. 364.

² Eberth and Köster, see Doebelin's *Diss.*, p. 9.

³ Zit, *Ibid.*, p. 9.

⁴ Letzerich, *Ibid.*, p. 18.

⁵ Rosenbach, *Ibid.*, pp. 18, 19.

⁶ Muir and Ritchie, *Manual of Bacteriology*, 1899, pp. 358, 359.

have been most frequently observed in so-called simple endocarditis, as also in the malignant or ulcerative variety. Again, "extensive swelling of the tissues in the neck, and suppuration in the glands, have been found to be associated with the presence of these adventitious organisms,"¹ and, though neither suppuration nor gangrene occurred, it must be said that my patient's throat was very sore, and the glands were much enlarged and exceedingly tender, and in spite of warm soothing applications, kept the child awake for three nights before the cardiac murmur developed, which so far, I think, may be taken as presumptive evidence of the presence, in the glands at least, of some of these accompanying organisms.

Whilst canvassing opinion on this case, I referred the facts to Dr. R. M. Buchanan, our city bacteriologist, and he considered it rather remarkable that this child should have suffered so frequently from pneumonia; he thought it showed that she was highly susceptible to the pneumococcus, that she seemed incapable of acquiring an immunity to it, and taking into consideration the frequency of this organism in the mouth, gave it as his opinion that in all probability the endocarditis had been caused by a pneumococcus infection.

So long as the balance of opinion is in favour of the view that the diphtheria bacilli remain quite local, this explanation of Dr. Buchanan's seems most likely. Of course, the endocarditis may have been set up by streptococci or staphylococci. Still, we know that the pneumococcus is a microbe that is always with us more or less, and this patient all her life has betrayed a strong susceptibility to it. Further, it is agreed that "the toxins produced by such bacteria as the bacillus typhosus and the bacillus diphtheriæ can devitalise the lung to such an extent that secondary infection by the pneumococcus is more likely to occur and set up pneumonia," so we need not be surprised if it should cause in the same way endocarditis, more especially in such a susceptible individual, though we would have expected that the lung again would have proved the vulnerable part.

Against complications caused by the organisms accompanying the bacillus diphtheriæ, the antidiphtheritic serum has no effect. Now, the serum was injected on the fourth day of the illness and again on the sixth day, and though all along the pulse-rate had been high, and though the sounds in the apex region had been blurred from the eighth day, the systolic murmur only became unequivocal on the tenth day of illness. Even if we allow the eighth day (when the first sound at the

¹ Muir and Ritchie, *Manual of Bacteriology*, 1899, pp. 358, 359.

apex was a bit blurred and the apex beat was becoming diffuse) to be the time when the endocarditis commenced, that gives two full days after the second dose of serum, which would seem to point against the diphtherial nature of the endocarditis. On the other hand, it must be stated that the diphtheritic membrane did not appear on the right tonsil till the day following the first injection of serum, was decidedly larger on the day after that again, when the second injection was given, and was considered to be still spreading twenty-four hours afterwards, though breaking down on the next day. The diphtherial membrane itself appears to have been somewhat unduly resistant to the action of the serum, but it has been suggested by Dr. Buchanan that here again, in the resistance of the membrane, we have probable evidence of a pneumococcus—as well as a diphtheritic—infection.

Before concluding, there is another question that may be asked. As the endocarditis only appeared after the injection of the antitoxic serum, had the injection of the serum anything to do with the development of the endocarditis? Many complications have been ascribed, rightly or wrongly, to the use of diphtheria antitoxine, viz., abscesses, pyæmia, tetanus, pyrexia, rashes, joint-pains, anuria, and nephritis, but in the long list of papers published on these adverse results of the antitoxic serum, and tabulated in the *Catalogue of the Surgeon-General of the United States, America*, I can find no mention of endocarditis. I can honestly declare that the strictest antiseptic precautions were employed, so that it seems unlikely that I introduced any contamination apart from the serum.

In conclusion, then, I would say (1) that this child developed endocarditis during an attack of diphtheria; and (2) that such a complication is extremely rare; (3) the evidence of bacteriologists suggests, in spite of the fact that the diphtheria bacillus has been found in the vegetations of endocarditis, that this complication probably results from some organism other than the bacillus diphtheriæ itself, which only perhaps predisposes the tissues to succumb; (4) the most probable microbial offender in this case was the versatile and ubiquitous pneumococcus; (5) it is impossible to say how far the serum itself may have been responsible for causing the endocarditis; the verdict, I should fancy, is “not proven.”

I take this opportunity of expressing my indebtedness to Dr. R. M. Buchanan, not only for permission to use his bacteriological report, but also for allowing me to quote the opinions he was kind enough to express on the case.

AN OLD STETHOSCOPE.

BY JOHN F. FERGUS, M.A., M.D.

[The writer is supposed to have picked up in one of the wards of the Western Infirmary, Glasgow, an old-fashioned stethoscope, and, on asking for its history, to have been informed that it was supposed to have belonged to Sir William T. Gairdner, and had been lost or mislaid when Sir William removed to Edinburgh on his retiral from the Chair of Medicine in Glasgow University. The old instrument tells its own tale.]

I'M an auld-fashioned stethoscope, plain in the face,
 An' my figure's ungainly an' wantin' in grace,
 An' I'm no ornamented wi' twa tubes o' rubber,
 An' I'm noo a mere tool for the houseman or "scrubber."

The students a' use me an' fling me aside,
 Wi' never a thocht o' the days o' my pride ;
 An' they never suspect', though I own it at last,
 That though I'm a stethoscope, I've got a past.

Noo my sand's runnin' doon, an' I'm left a' ma lane,
 I look back on my days as an innocent wean,
 When I grew by the Pentlands, a healthy young tree,
 Wi' nae thocht what the future was bringin' tae me.

Oh, the fine summer days, wi' the flo'ers an' the heather,
 An' the kine an' the bees makin' music thegither ;
 An' the keen winter nichts, when I played keeky-weeky
 Wi' the wee peeping stars that blinked down at Auld Reekie.

But a tree's like a bairn, ye maun tend it an' train,
 Or a natural object it aye will remain ;
 An' a kintra-side wean must get finished in knowledge
 By gaun in due time to the Town an' the College.

An' as I had pretensions then kent as "genteel,"
 An' hoped, like a' Scotsmen, Fame's ladder to speel,
 I bade lang fareweel to my ain country folk,
 An' went aff to the town, wi' its glamour and smoke.

.

Awa' up "the Bridges" there ance was a shop
 Where the young Æsculapians were ance wont to stop
 To gaze at the treasures its windows contained,
 An' there for a while at my ease I remained.

But my elegant figure and polished appearance
Gey an' soon frae that window effected my clearance
For ae day as I sat seeing what was to see,
I spied a young chiel that was glowerin' at me.

A lang lanky lad, an' looked gawky a wee,
Wi' a faur awa' look in a mystical e'e;
Yet a face that ye liked, an' ye couldna tell why,
An' a face that I'll mind till the day that I die.

He cam' into the shop, an' he craned his lang neck,
An' a hantle he talked aboot yin ca'ed Lænnec;
Then he spiered at the shopman to name him my price,
An' I'se warrant the billy did that in a trice.

Then he dived in his pooch, that was shaped like a fob,
An' brocht oot the siller—I mind 'twas five bob;
An' he said 'twas a very guid bargain at that,
Then gruppud me, an' stapped me awa' in his hat.

Oh, the thochts that I thocht, as I sat in his lum,
O' the days that had been, o' the days that might come;
For ye see that I hadna yet risen to the knowledge
I'd been bocht by a rising young teacher at College.

Oh, my ignorance gross ye would hardly believe,
An' it wisna till *he* took me into his neive
That I full understood what a dignified place
I was destined to fill in the ills o' the race.

I kent na his name till I spiered at the hizzie
Ae morn when at dustin' his room she was busy;
An' she cried—"Mercy me! but the thing maun be silly
No to ken he's ca'ed Gairdner, an' terrible skilly."

So, to shorten my story, I fand mysel' servant
O' a chiel o' great pairts an' maist wunnerfu' fervent,
Wha wi' me at his lug could tell just in a crack
Whit diseases folk had, an' whit drugs they should tak'.

But o' a' the collection o' pairts ye ca' "man,"
The heart was the thing he aye put in the van;
Though he kent brawly weel other pairts I could name—
Like the lights, an' the harns, an' the guts, an' the wame.

Oh, the hours that we spent at the sounds o' the heart,
In unravellin' its rhythm, an' pu'ing apart
The long pause, the short pause, the "lupp" an' the "tup,"
An' the snap o' the valves that played crack like a whup.

An' the murmurs that girmed, an' the murmurs that cooed,
 An' the murmurs that hummed, an' the murmurs that mooed,
 An' the murmurs at whilk ye could just mak' a guess,
 An' the wale o' a' murmurs, the gurrin' A.S.

Oh, I weel mind the day when that murmur he fand
 In a lassie that cam' frae a Canongate land;
 We were baith as perjink an' as prood as could be,
 An' I think ye'll alloo some sma' credit to me.

For by this time my rawness had maist worn awa';
 I could haud up my head, an' could craw my ain craw;
 For I lived in an air fairly seepin' wi' knowledge,
 An' kent by heid mark a' the big-wigs at College:

An' kent weel by hearsay the names o' lots mair,
 Who, tho' gane to their rest, in their time had their share
 In adding a stane to the Temple o' Learning,
 That will aye grow an' grow, till it's past a' discerning.

There was Spence, an' M'Lagan, an' Goodsir, an' Syme,
 An' Sir Jeems, the great howdy, I've seen mony a time;
 An' the numberless times I've had dinned in my ears,
 Auld Galen and Skoda, an' a' their compeers.

Tho' I'm noo near my dotage, an' fa'en frae my pride,
 I have travelled the hale o' the east kintra side;
 Frae the Bullers o' Buchan to Berwick-on-Tweed
 Me an' him's gane thegither to puir folks in need.

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I ken the High Street stane for stane, I'm prood o' auld
 St. Giles,
 An' Embro' toon I lo'e it weel baith when it girns an' smiles;
 I liked to see the sun gang doon ayont Corstorphine's hills;
 I've tramped the ootskirts o' the toon, frae Braids to
 Canonmills.

I've hearkened at fair leddies' breists where Youth pulsed
 fair an' free,
 An', eh, wae's me, I've had to tell a bairn 'twas gaun to dee;
 I've heard the last expiring sob o' manhood in its prime,
 An' seen auld folks just sough awa—ah, me! hoo mony a time.

I've kittled brosy advocates in their weel covered ribs;
 They couldna cross-examine me—I never tell nae fibs;
 I'm no' an expert witness, an' I kenna hoo tae lee;
 Nae mair would they, the pawky chieils, gin they'd but
 kent auld G——.

A wee bit faur-tae-seek at times, his meaning whiles ye
missed,
But gleg's a grig, wi' me in's nieve, when listening at a
kist;
An' syne at a' things clinical he wisna tae be beat,
His heid was stuffed as fu' wi' them as is an egg wi' meat.

An', oh, the loss to Emboro' when, in the course o' time,
He got a ca' to Glesca toon, wi' a' its reek an' grime;
But gin there's reek there maun be licht, an' nane ye'll
brighter find
Than Learning's lamp there brawly lit by him then left
behind,

For younger men wi' care to tend, wi' willing heart an'
brain,
To study nature, and to learn *her* lesson clear an' plain;
To find a God-given document in ilka form an' face,
In whilk the Almighty's hand-o'-write wi' reverence ye may
trace.

I'm an auld-fashioned stethoscope, worn oot an' frail,
Just a wee bit o' chaff frae auld Faither Time's flail;
I've tired ye, I see, but I hope ye'll no mind
When ye think what it means to be left here behind.

I've a pain at my heart, but nae murmur's in me;
We maun a' learn to thole a' the things that maun be;
An' as for my maister, I daursay it cost
Him a sair heart, when leaving, to think I was lost.

But this I *will* say, though my life's runnin' done,
I hae ae thing that cheers me, like rays o' the sun,
An' will brighten my life till the day that I dee—
I ance was a stethoscope owned by auld G——.

The writer of the above verses having done himself the honour of sending to Sir William Gairdner for his kind acceptance a manuscript copy of the poem, Sir William, in a delightfully characteristic letter of thanks, makes reference to an episode which is of such interest that the writer of the verses ventures to transcribe it in Sir William's own words, knowing well that it will appeal to the many old pupils who, wherever this *Journal* is read, still cherish as a precious treasure the memory of their revered old teacher.

Sir William says:—"I don't know if the conditions of it [the poem] would have been at all different to your mind, had you known that although

no stethoscope of my very early period is now, so far as I know, *in rerum natura*, I have on my mantelpiece one still in good working order, which was made for me, at the instance of Prof. John Chiene, out of the very timbers of the old E.R.I. when it was destroyed soon after I went to Glasgow. This one has served me loyally for a good many years now (but was never worn 'in the hat!'), and would have been a very fitting mouthpiece for your handsome and loyal ode."

FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW:
PRESENTATION TO THE FACULTY
OF THE PORTRAIT OF THE SECRETARY AND LIBRARIAN,
ALEXANDER DUNCAN, B.A., LL.D.

AT the annual dinner of the Faculty of Physicians and Surgeons of Glasgow, held in the Faculty Hall, on Friday, 5th December, 1902, a portrait of the Secretary and Librarian, Dr. Alexander Duncan, painted by Mr. Joseph Henderson, was presented to the Faculty, and a replica to Dr. Duncan.

DR. JOHN LINDSAY STEVEN, in making the formal presentation, said—Mr. President, in the name of the subscribers, all Fellows of this Faculty, it is my high honour and great privilege to ask you to accept for the Faculty a portrait, painted by Mr. Joseph Henderson, of Glasgow, of our greatly respected and well-beloved secretary and librarian, Dr. Alexander Duncan. (Applause.) The subscribers would have been much pleased had it been possible for you, sir, as President of the Faculty and official head of the medical profession in Glasgow, to have undertaken the duty of presenting the portrait, but as it was felt that you could scarcely be asked to perform both the duty of presenting and that of accepting, it has fallen to me to undertake the formal unveiling and presentation of the picture; not on account of any special fitness I possess to discharge such a duty, but mainly because I have been closely connected from its very beginning with the movement, whose object we successfully accomplish to-night, and because as a member of the Library Committee for many years, and latterly as Honorary Librarian, I have been intimately associated with Dr. Duncan in an important department of his official work. (Applause.)

It is fitting on an occasion such as this, when we are giving public expression to our feelings of affection and respect for one whom the Fellows of this Faculty have always delighted

to honour and have always loved, that something should be said of the career of Dr. Duncan, and of his connection with this ancient Incorporation, a connection which has now lasted uninterrupted and unimpaired in fidelity of service and ability of administration, for the long period of nearly thirty-eight years. (Applause.) In the summer of 1865 the Faculty determined to seek for a gentleman of education and culture who should act as secretary and librarian, and Dr. Duncan became a candidate for the post. Before his appointment by the Faculty, Dr. Duncan, after receiving his early education in his native parish of Muckart, near Rumbling Bridge, had been engaged in teaching and in study; and in his studies he was so successful, although his well known modesty would never allow you to learn the fact from himself, that in 1864 he graduated as B.A. in the University of London in the first division. There could be no doubt as to his fitness for the office, and Dr. Duncan was unanimously elected to the post, on the duties of which he entered on 12th August, 1865. His whole subsequent career has fully justified the wisdom of the choice of our predecessors.

Although it may not be without feelings akin to sorrow that Dr. Duncan will hear the remark I am now about to make, I think it is a remark that should be made upon this occasion. On the present roll of the Faculty, which contains the names of 197 Fellows, there are now only 12 gentlemen, headed by our venerable late Visitor, Dr. John Burns—(applause)—whom I am glad to see with us to-night in health and strength—whose names were there before the date of Dr. Duncan's election. As Fellows of Faculty, then, we are all, in a sense, the pupils of Dr. Duncan, and have received our training and experience in Faculty business at his hands. In all the movements that have taken place in the life of our Incorporation during the past thirty-seven years Dr. Duncan has taken an important part. Presidents have come and Presidents have gone, Councillors have played their part and gone their way, many Fellows have dropped from the ranks and new recruits have stepped forward to fill the vacant places, but we are thankful to-night that in the Divine providence, notwithstanding all the changes that have taken place since 1865, our secretary is still with us—(applause)—the same potent influence for good, the same clear and cultured intellect, the same modest unassuming man. (Applause.) In all our business and in all difficulties we consult our secretary still, and follow his advice with the same confidence as of old. (Applause.) If any memorial or address has to be drafted, be it a loyal coronation

address to his gracious Majesty the King, a birthday congratulation to a man pre-eminent in general or in medical science, or a humble memorial to that terrible body, the General Medical Council, who but Dr. Duncan can draft it. As an authority on all the details of medical education in Scotland his standing is high, and on all matters connected therewith he is frequently consulted. His labours as secretary have been faithful and unsparing; in season and out of season the welfare and dignity of the Faculty have been his constant care. (Applause.)

There is, however, another department of Dr. Duncan's work of which you, Mr. President, who for the long period of twenty-five years acted as honorary librarian, are much better qualified to speak than I am. I refer to his work as librarian. Under the fostering care of yourself and Dr. Duncan, the library of the Faculty has now grown to be one of the most important and valuable collections of medical literature in Scotland, rich in its representation of modern literature, and perhaps richer still in its stores of the older writings, so valuable to all who are interested in the history of our art or of the diseases we have to treat. The splendid catalogues which we now possess have been entirely compiled by Dr. Duncan, and only the members of the Library Committee know the enormous labour their compilation involved. (Applause.)

On one other point only I must ask your forbearance before I close. For more than three hundred years the Faculty has been in existence as an Incorporation founded by the Royal Charter of King James VI of Scotland, and for a hundred years at least it has patiently waited for its historian. The historian came in the person of our Secretary—(applause)—and he was worth the waiting for. (Renewed applause.) "The Memorials of the Faculty," published in 1896, is not merely the record of the doings of a professional incorporation: it is much more than this, and possesses a much wider interest. It is a valuable and accurate history of the social life and the development of the medical profession in the West of Scotland, and of the rise and progress of the Glasgow medical school. Its literary merit is of a very high order indeed, and it will always rank as one of the classics of the Glasgow press. Our ancient University expressed its high opinion of the value of his literary and bibliographical labours by conferring upon the author the degree of LL.D.—(applause)—and in honouring the modest and retiring scholar it did honour to itself. (Applause.)

For these reasons then the subscribers thought that the

time had fully come for adding the portrait of our Secretary to the walls of the Faculty Hall, but not for these reasons only. They also desired, in this manner, to give visible expression to their affection for one who, by his true nobility of character, by the uprightness and integrity of his whole life, and by his faithful friendship, has been an inspiring and an ennobling example to us all. (Applause.)

Mr. President, it gives me great pleasure to ask that the portrait be now unveiled, and that you should accept it on behalf of the Faculty.

The portrait was then unveiled amidst loud applause.

The PRESIDENT (Dr. James Finlayson) said he had great pleasure, on behalf of the Faculty, in accepting the portrait which had been presented to them by Dr. Lindsay Steven in such an eloquent speech. (Hear, hear.) He believed he was right in saying that there had never been such a large gathering at any dinner of the Faculty since its institution three hundred years ago. (Applause.) That was not to be wondered at when they considered they were accepting the portrait of their Secretary on that occasion. Amongst the subscribers they had ninety-four Fellows of Faculty, which, excluding those who were at a great distance from them, represented a very large proportion of the total number of Fellows within their reach. For the last three years he had been in intimate relationship with Dr. Duncan in his capacity as Secretary. Their experience had been that his attention to the duties of the Faculty business had been very useful to them as officials. His personal relationship with Dr. Duncan went back for very much more than the term of his office as President and Visitor there. Since 1875, acting as Honorary Librarian of the Faculty, he had been in very close and intimate relationship with Dr. Duncan in his official capacity as acting librarian, and he could testify to the enormous labour which was involved in the re-arrangement of their library and in the preparation of the catalogue, as arranged in 1885, and of the second volume, which was issued last year. He believed their catalogue might rank as one of the best catalogues of medical books issued in this country. (Applause.) As President of the Faculty, it was a special pleasure to him to think that they would have on the walls of the Faculty a portrait of one who, as Dr. Lindsay Steven had said, was its historian, and he had to express his thanks to the subscribers for their splendid gift, which would be preserved with the greatest pleasure. (Applause.)

DR. D. C. M'VAIL, in presenting Dr. Duncan with a replica of

the portrait, said that thirty-seven years ago Dr. Duncan came among them and conquered the Fellows of the Faculty, and by force of character and irresistible kindness, he had attached them to him ever since. He had been the considerate companion and true friend of every one of them. He had never mathematically calculated just where his official duties began and ended, but he had been their personal adviser and helper in matters affecting wholly themselves. No one ever came to him for assistance in vain. (Hear, hear.) Their individual interests he had made his own, and his clear perception and wide experience had often directed them when they were in doubt or difficulty. The replica which he had the honour to present to Dr. Duncan was not to speed the parting guest. On the contrary, it was to bind Dr. Duncan more closely to them, that for many years yet to come he might continue to be their guide, philosopher, and friend. Along with the replica, Dr. M'Vail presented Dr. Duncan with a volume containing the autographs of the subscribers to the portrait.

DR. DUNCAN, who was received with applause, said he thanked the subscribers with all the warmth and depth of feeling of which he was capable for that extraordinary expression of their kindness and regard. It involved no repetition that he should also thank the Faculty, who, through their President had done him the honour, unexampled in their history, of accepting the portrait of an old servant. His obligations were also due to the subscribers again, who, through Dr. M'Vail, had presented him with a replica of the portrait for himself. And last, but not least, he had to express his deepest thanks to the gentlemen who had spoken. They had spoken words kind, but too appreciative. They had seen him through the haze and mists of old associations, and it was, therefore, not surprising that the portrait they had painted of him was scarcely so true to life as the features that looked out from the canvases of Mr. Henderson. (Laughter.) He could conceive quite well that the Fellows had been moved, in part at least, by a consideration of his own relations to old Father Time. These relations, he admitted, were not of yesterday; they were of some little standing. But he had considerable difficulty in forming in his own mind a working theory of what really to a considerable extent underlay the movement until he heard Dr. Lindsay Steven speak. He (Dr. Lindsay Steven) pointed out that the Fellows were in the habit of seeing all other offices—as regards the occupancy of them—in a state of flux and change, but he (Dr. Duncan) seemed to go on for ever. (Laughter.) Presidents, Visitors, treasurers

and honorary librarians and examiners, and all the rest of them, duly appeared upon the scene, they strutted their brief hour upon the stage—(laughter)—and then they vanished like the baseless fabric of a dream; and, compared with their ephemeral existence, he might be regarded as an ancient landmark, weather-worn and a little scarred, but yet which, at all events, had withstood the buffetings of the blast. His period of service, which had existed for nearly eight and thirty years, had coincided pretty nearly with that of fifteen presidencies. During that time he had seen many changes. The whole *personnel* of the Faculty, with few exceptions, had been renewed; other changes of a more or less sweeping character had taken place in every department. He thought, looking back, that the trend of the greater part of these changes had been in the direction of improvement and progress—(hear, hear)—and that the Faculty at the end of the period emerged with a wider area of work, and in a position stronger and better than it occupied at the beginning of it. (Hear, hear.) The number of Fellows had been a little more than doubled, and that in spite of the operations of a selective process, as the Fellows were well aware, created mainly by the existence of a testing Fellowship entrance examination. The library had been enormously extended, and was now, as a special collection, one of the best in the country. As a result of that considerable extension, the premises in which they were met had on two different occasions been enlarged, and the additions occupied a considerably larger extent than the original building. So much for home progress. With regard to what he might call their foreign relations, these were equally satisfactory; but more especially had that been the case since part of the examining and the whole of the licensing functions of the Faculty had been consolidated with those of the Edinburgh colleges. (Hear, hear.) The result of that co-operation for purposes of work had quite fulfilled the anticipations of the originators of it; and, as a secondary consequence, but one of great importance, the bonds of goodwill and friendship existing mutually between these colleges and the Faculty had been forged stronger in proportion as their knowledge of each other had increased. In conclusion, Dr. Duncan said his period of work had been one of very great enjoyment, to which had contributed not only the congenial employment and surroundings, but the great consideration for inevitable shortcomings extended to him by the Fellows.

PROFESSOR JOHN GLAISTER proposed the health of the artist, to which MR. JOSEPH HENDERSON made a suitable reply.

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 Dr. John M. Cowan, 14 Woodside Cres.
 Dr. J. M. Cuthbertson, Highfield, Droitwich.
 Dr. T. K. Dalziel, 196 Bath Street.
 Dr. George Dickson, 16 Victoria Cres.,
 Dowanhill.
 Dr. Walker Downie, 4 Woodside Cres.
 Dr. Wm. G. Dun, 15 Royal Crescent.
 Dr. John Edgar, 5 Clairmont Gardens.
 Dr. G. H. Edington, 225 Bath Street.
 Dr. Freeland Fergus, 22 Blythwood Sq.
 Dr. James Finlayson, 2 Woodside Place.
 Dr. Neil Fullerton, Lamblash, Arran.
 Dr. Donald Fraser, 3 Orr Sq., Paisley.
 Dr. Thomas Forrest, 1 Moray Place,
 Strathbungo.
 Dr. Hugh Galt, 14 Berkeley Terrace.
 Dr. Samson Gemmell, 17 Woodside Pl.
 Dr. John Glaister, 3 Newton Place.
 Dr. Bruce Goff, The Lindens, Bothwell.
 Dr. John G. Gray, 2 Montgomerie Street.
 Dr. E. A. Gibson, 2 Queen's Crescent.
 Dr. James Hamilton, 1 Royal Crescent,
 Crosshill.
 Dr. George Halket, 4 Royal Crescent.
 Dr. C. O. Hawthorne, 28 Weymouth St.,
 London, W.
 Dr. F. Henderson, Craigroy, Kilmalcolm.
 Dr. T. Brown Henderson, 19 Elmbank St.
 Dr. W. A. Hepburn, Coxhoe, Co. Durham.
 Dr. J. Hinshelwood, 26 Woodside Place.
 Dr. W. R. Jack, 43 Lansdowne Crescent.
 Dr. Robert Jardine, 5 Clifton Place.
 Dr. J. K. Kelly, Queen Mary Avenue,
 Crosshill.
 Dr. Munro Kerr, 28 Berkeley Terrace.
 Dr. D. N. Knox, 10 Woodside Place.
 Dr. T. Lapraik, Clarence Lodge, Uddingston.
 Dr. John M'Convillie, 27 Newton Place.
 Sir William Macewen, 3 Woodside Cres.
 Dr. Johnstone Macfie, Glasgow.
 Dr. J. D. Maclaren, 1 Newton Place.
 Dr. D. C. M'Vail, 5 St. James' Terrace.
 Dr. Angus Macphee, Kirklee Gardens.
 Mr. A. E. Maylard, 10 Blythwood Sq.
 Dr. G. S. Middleton, 8 Woodside Place.
 Dr. T. K. Monro, 10 Clairmont Gardens.
 Dr. J. C. M'Walter, 19 North Earl St.,
 Dublin.
 Dr. R. Barclay Ness, 18 Woodside Place.
 Dr. A. Napier, 15 Queen Mary Avenue.
 Dr. David Newman, 28 Woodside Place.
 Dr. E. H. L. Oliphant, 23 Newton Place.
 Dr. J. Peake, Stroud Green, London, N.
 Dr. Robert Perry, 11 Queen's Terrace.
 Dr. Robert Pollok, Laurieston House,
 Pollokshields.
 Mr. J. H. Pringle, 172 Bath Street.
 Dr. A. Maitland Ramsay, 15 Woodside
 Place.
 Dr. Thomas Reid, 11 Elmbank Street.
 Dr. W. L. Reid, 7 Royal Crescent.
 Dr. J. Crawford Renton, 1 Woodside
 Terrace.
 Dr. Alex. Robertson, 11 Woodside Cres.
 Dr. J. B. Russell, 49 Braid Road, Edin-
 burgh.
 Dr. H. Rutherford, 12 Newton Place.
 Dr. Wm. Seright, 13 Brisbane Street,
 Greenock.
 Dr. A. R. Simpson, 52 Queen Street,
 Edinburgh.
 Dr. Samuel Sloan, 5 Somerset Place.
 Dr. Archibald Sloan, 21 Elmbank Street.
 Dr. J. Lindsay Steven, 16 Woodside
 Place.
 Dr. J. Stevenson, Cora Linn, Clydebank.
 Dr. Nigel Stark, 4 Newton Place.
 Dr. James Stirton, 5 Newton Terrace.
 Dr. Jas. Swanson, 101 St. George's Rd.
 Dr. William Snodgrass, 11 Victoria Cres.,
 Dowanhill.
 Dr. G. P. Tennant, 159 Bath Street.
 Dr. Moses Thomas, Glasgow.
 Dr. J. Wallace, 16 Union Street, Greenock.
 Dr. W. Whitelaw, Middlecroft, Kirkin-
 tilloch.
 Dr. James Whitson, 13 Somerset Place.
 Dr. W. A. Wilson, Thorncliff, Greenock.
 Dr. Charles Workman, 5 Woodside Ter.
 Dr. David Yellowlees, 6 Albert Gate,
 Dowanhill.

EXECUTIVE COMMITTEE.

Sir Hector C. Cameron.
 Dr. John Glaister.

Dr. D. C. M'Vail.
 Dr. John Lindsay Steven.

Dr. James Finlayson, *Convener*.
 Dr. John Lindsay Steven, *Hon. Treasurer*.

Obituary.

PROFESSOR JOHN YOUNG, M.D.

WE regret to announce the death of Professor John Young, M.D., which took place at his residence, Bute Gardens, on the 13th December, 1902. The deceased gentleman had been in indifferent health since the spring of 1901, and on that account was unable to deliver the oration on William Hunter at the celebration of the ninth jubilee of the University. His health not improving, he eventually resigned his appointment.

Born in Edinburgh on 17th November, 1835, John Young was educated at the High School of that city, and ultimately graduated in medicine at the University. On leaving the University, he was for some time engaged in the Government Ordnance Survey, and, in 1866, he was appointed to the Chair of Natural History in the University of Glasgow. The duties of the chair comprised the teaching of Zoology and Geology, but, in addition, he held the Honeyman-Gillespie Lectureship in Geology, and was keeper of the Hunterian Museum and Library. To his wide knowledge of natural history was added a considerable acquaintance with numismatics, a circumstance which is easily understood when one remembers the magnificent collection left by William Hunter, a collection which is becoming more widely known through Mr. George Macdonald's famous work.

Apart from the work of his chair, Professor Young took a keen interest in Queen Margaret College, and in all other educational matters. Among his relaxations, painting occupied a foremost place, and many of us had an opportunity of seeing him, palette in hand, engaged in works that were not mere classroom diagrams. His musical tastes were also well known. As a teacher, he was often above the heads of his audience, and he doubtless appeared a cynic to the student who, having merited a rebuke, became the victim of his sarcasm; but many were permitted to get through the outer crust, and to feel the friendliness of the man towards them. Dr. Young had the courage to be unconventional, and his death removes a striking personality which seemed to many generations of students to be part and parcel of the medical quadrangle.

CURRENT TOPICS.

THE LISTER JUBILEE.—The issue of the "Lister Jubilee Number" of the *British Medical Journal* last month (13th December, 1902), may fairly be termed an occurrence of the greatest interest to the medical profession throughout the world, inasmuch as it gives us a clear and concise account of the rise and progress of modern surgery.

The subject-matter is treated of in a series of articles and papers which fall into two categories. Of these, the more interesting is the second, in which we have a historical narrative of Lord Lister's early work. In the first we are presented with lectures and papers by various eminent surgeons, British and foreign, on various subjects in surgery, all of which have sprung into being as the result of the work of Lord Lister.

These papers, which "help to make up a notable *Festschrift*," vary within wide limits. Professor von Bergmann describes how operations on the mouth and neck and on the rectum have been rendered comparatively safe by the packing of the resulting large raw cavities with iodoform gauze. Professor Durante contributes observations on cerebral localisation. These, together with Mr. Howard Marsh's *Bradshaw Lecture on Infective Arthritis*, give some idea of the extent, in different departments, to which surgical treatment has become possible. The influence of Lord Lister on military surgery is dealt with by Professor Ogston, while Dr. Berry Hart depicts his scientific relationship to Pasteur. France and Denmark are represented by M. Lucas-Championnière and Professor Oscar Bloch respectively, and their fervid enthusiasm is catching as one reads. M. Lucas-Championnière declares that "the whole of surgery was born from Lister. . . . Active surgery—the science of operating—only began with him. . . . Lister gave a scientific basis to surgery." Professor Bloch is equally eulogistic, and both writers sound a warning note to those whose tendency is to attribute too much importance to environment (buildings, theatres, &c.), and to neglect the principle of antisepsis. Professor von Mickulicz-Radecki declares that "the whole development of surgery in the last twenty-five years is one long hymn in honour of Joseph Lister." To worthily celebrate Lister at the present day, one

would require to take into consideration most of the departments of medicine as well as surgery, but Professor Mickulicz confines himself "to taking one little leaf from Lister's laurel wreath as the point of departure of his essay," viz., the treatment of fractured patella by suture of the fragments. While properly ascribing the origin of the procedure to Lord Lister, the distinguished Professor at Breslau makes a slight mistake in stating that "Lister was the first to accomplish a regular suture of the patella." The operation was first performed by Sir Hector (then Dr.) Cameron in the Royal Infirmary of Glasgow, in accordance with Lister's suggestion.

The historical portion of the subject is compressed into a matter of twelve pages. Never have twelve pages contained matters of greater interest to the medical profession than are to be found here. The title is "Lord Lister and Antiseptic Surgery: The History of a Revolution," and the subject opens with an able introduction. This is necessary as a biography of the man, as the succeeding articles relate rather "the biography of a scientific thesis." These articles appear in chronological order. Professor Annandale writes on "Early Days in Edinburgh"; Sir Hector Cameron, on "The Evolution of Modern Surgery"; Professor Chiene, on "Edinburgh Royal Infirmary, 1869-77"; Professor Watson Cheyne, on "Listerism and the Development of Operative Surgery." Of these the most interesting is Sir Hector Cameron's account of the evolution of modern surgery, and this not merely to Glasgow readers because it deals with the Glasgow period, but to all, because in it Sir Hector traces most carefully the stages of the process. Beginning with the horrors of surgery before antiseptis, he sketches Pasteur's influence on Professor Lister, and the practical application of Pasteur's facts by the latter in his treatment first of compound fracture, and afterwards of large abscesses. This is followed by a narrative of the evolution of the buried ligature.

The next part of Sir Hector Cameron's paper deals with the principle of the avoidance of local irritation, and shows how that principle was gradually evolved. When Lister left Glasgow in 1869, the evolution had reached the stage of "the protective plaster," which was aseptic and unstimulating, and, according to Professor Chiene, the present-day surgery is no new departure but "the direct outcome of Lister's early work." Sir Hector concludes with an account of the results of the new system on the practice of surgery.

The contributions of Professor Annandale and Professor Chiene are interesting personal reminiscences of both Syme

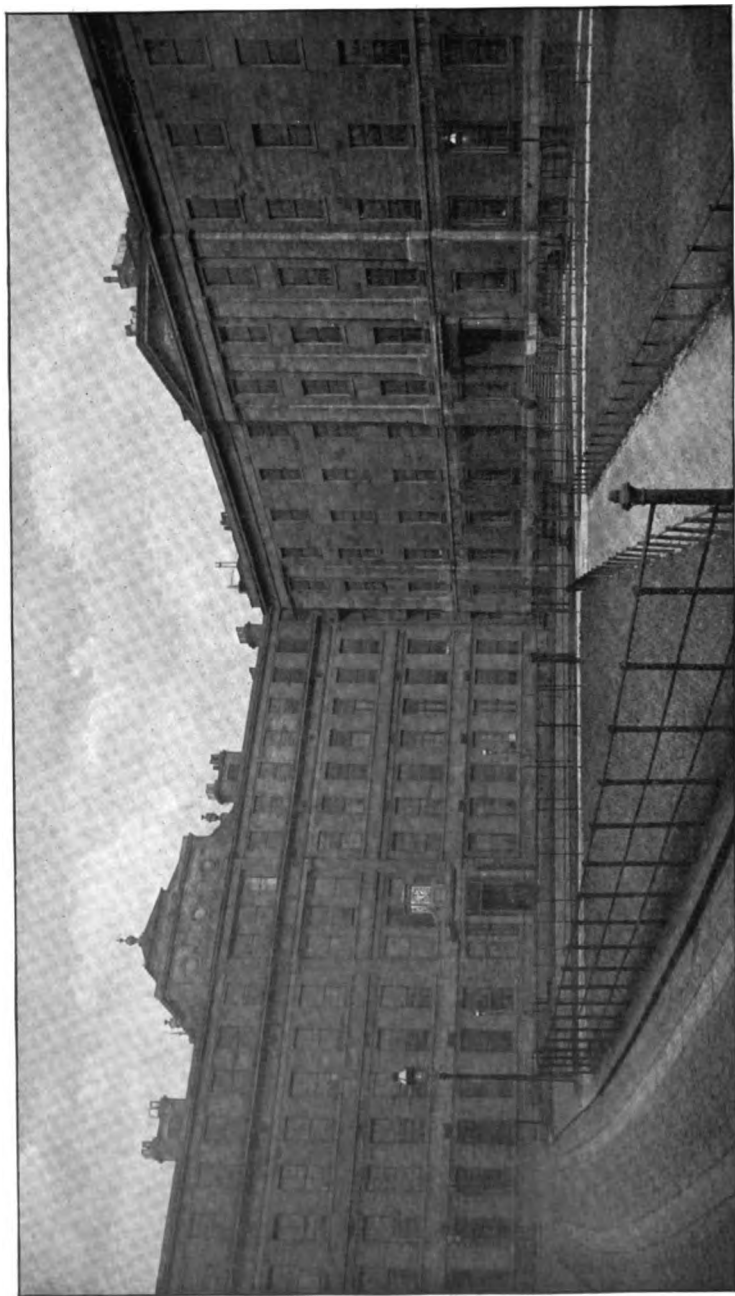
and Lister, and make delightful reading. In one important particular, however, Professor Annandale has made a slight error. He mentions that "before leaving for Glasgow in 1860, Mr. Lister had commenced his bacteriological work in connection with antiseptics, but at this time its practical details were still in their infancy, and it was not until after much further experience that antiseptic surgery became simplified and satisfactory as regards its practical application. It is well known to all connected with Mr. Lister at this time how carefully and earnestly he worked to advance his system, but I leave it to other of my colleagues to write of its steady but gradual perfection." As a matter of fact, it was not till after Lister came to Glasgow that bacteria or other microbes claimed his attention. He used to teach his extra-academical class in Edinburgh (before he came to Glasgow) that decomposition of the blood, &c., in open wounds was the main cause of suppuration. Though he did what he could in his early years in Glasgow to combat decomposition, those efforts were all in vain till Pasteur's researches opened a new way—not the exclusion of oxygen, which was hopeless, but combating the microbes.

Mr. Watson Cheyne draws attention to the fact, often overlooked, that besides being the founder of the new system, Lord Lister is entitled to the credit of many new operative procedures. Of these we may mention osteotomy, the treatment of psoas abscess, the modern re-introduction of suprapubic cystotomy, incision of joints, excision of the wrist, and suture of fractured patella; while, according to Sir Hector Cameron, he was the first to remove the axillary glands in cancer of the breast. We may add that Lord Lister also devised the well-known sinus-forceps, the ear-hook, the conical bougies for the urethra, and the bladder-sound. He likewise introduced the steel gouge, and the chisel and the mallet, into the surgical armamentarium.

Editorial papers follow, in which it is shown how the antiseptic principle has reacted not only on the various special branches of surgery, but even on physiology, in which science the effects of experiments can now be estimated without the disturbing element of inflammation.

There is, further, a bibliography, compiled mainly by Professor Chiene, of Lord Lister's contributions to medical and scientific literature.

The number is embellished with reproductions of Mr. Hugh Riviere's recent oil-sketch and of early photographs of Lister; with a portrait of Syme; and with views of the front



by Stuart, Glasgow.

GLASGOW ROYAL INFIRMARY SURGICAL HOUSES.

From a Photograph
NORTH HOUSE

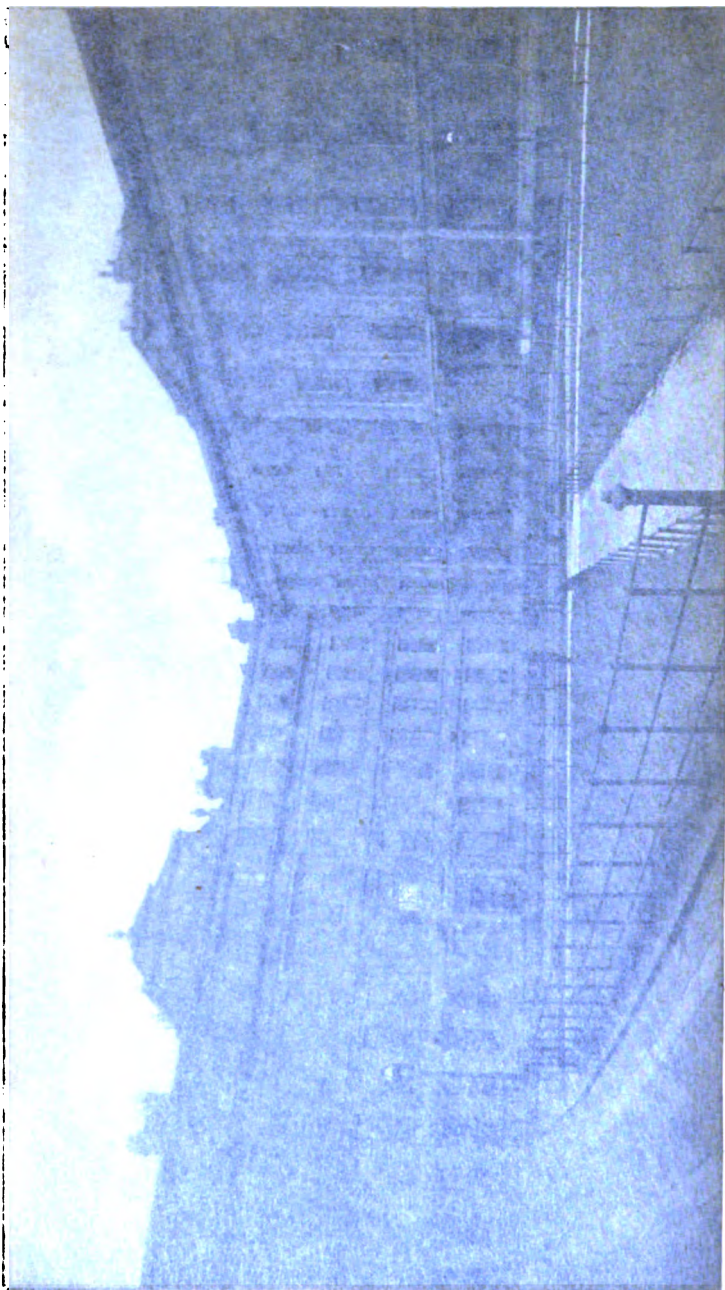
house of the Glasgow Royal Infirmary, the old Surgical Hospital in Edinburgh, and the frieze in the façade of the Pathologico-Surgical section of the Polyclinic in Rome.

Altogether, the Jubilee Number is a notable one, but the special interest which it excites in the minds of Glasgow men is due to the fact that here the inception of the movement was seen. Lord Lister's bacteriological experiments were commenced in Glasgow, and the Royal Infirmary was the cradle of the antiseptic system. The wards are not only still standing, but are in use at the present time. The accompanying illustration of the courtyard and Surgical Houses of the infirmary shows the windows of two of these wards—No. 24, on the ground floor of the north house, on the left of the doorway beneath the clock; No. 25, on the first floor, to the right of the clock. Adjoining the North House, and connected with it by covered gangways, is the East House. This building is nowadays used as part of the surgical hospital, but when Lister was in Glasgow it was the fever house. Lister's third ward (No. 10) is at the back of the Medical House, a photograph of which has been reproduced in the *British Medical Journal*.

G. H. E.

NORTHERN MEDICAL SOCIETY.—The usual monthly meeting of this Society was held on 2nd December, 1902. There was a good attendance of members. The constitution was finally considered, and the following motion by the President was proposed and seconded:—"That Divisional Committees be formed for ethical, advisory, and protective purposes, and that such a committee—to be called the 'North-West Divisional Committee'—consisting of members belonging to Springburn, Woodpark, and Maryhill area, be immediately formed, with powers for carrying out these objects in the area prescribed."

GLASGOW LUNACY DISTRICT BOARD: OPENING OF SANATORIA FOR CONSUMPTIVES.—On Tuesday, 16th December, 1902, a sanatorium for phthisical patients among the insane was formally opened at Gartloch Asylum. The pavilion will accommodate sixty or more patients, giving a very large air-space to each. The pavilion was built by Messrs Spiers & Co. in their combination of iron and wood, and the total cost will probably work out at £120 per bed, or a third of the expense in the case of a stone building. Additional accommodation was urgently required at Gartloch, so that the sanatorium will relieve the pressure considerably. The



From a Photograph

NO. 1011

GLASGOW ROYAL INFIRMARY SURGICAL HOUSES

For Stuart, Glasgow.

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building was formally opened less than six months after the contract for its erection was fixed.

On Thursday, 18th December, a similar sanatorium was opened at Woodilee Asylum. The death-rate from phthisis among the insane is at present so high that there is much need for sanatoria in connection with asylums, not only for the treatment of the tuberculous, but also to isolate these from the non-tuberculous inmates of the institution. It is to be hoped that the Board will soon see excellent results from this humane and progressive policy.

MEETINGS OF SOCIETIES.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1902-1903.

MEETING I.—22ND OCTOBER, 1902.

The President, DR. J. NIGEL STARK, in the Chair.

I.—SPECIMENS.

BY DR. JOHN EDGAR.

1. *Fibroid springing from the posterior supra-vaginal portion of the cervix uteri—Abdominal hysterectomy.*—Mrs. H., æt. 42, was admitted into the Samaritan Hospital on 13th October, 1902, complaining of dysuria of one year's duration.

History.—Married twenty-three years. Five children, last eight years ago. Labours normal. For the last year menstruation has been excessive, and there has been profuse leucorrhœa. Patient has complained greatly of pain in the sacral region, especially before the periods. Micturition has been very troublesome; the catheter requires to be passed frequently.

Examination.—The cervical canal is patent, allowing the finger to enter a distance of an inch and a quarter. Half an inch above the external os, a hard mass is felt projecting into the cervical canal from the posterior cervical wall. The body

of the uterus is felt in front. The sound passes $4\frac{1}{4}$ inches. A fibroid can be felt attached to the uterus posteriorly and filling up the pelvis.

Operation.—On opening the abdomen the fibroid was found to be springing from the posterior supra-vaginal part of the cervix uteri. It was impossible to bring it up through the abdominal incision, till a transverse incision had been made through the capsule, and the capsule stripped off its lower surface. The uterus and tumour were then removed together. The fibroid measures $6\frac{1}{4}$ inches by $5\frac{1}{2}$ inches by $3\frac{1}{4}$ inches. Circumference, $15\frac{1}{2}$ inches.

Patient is doing very well.

2. *Uterine fibroid—Supra-vaginal amputation of uterus.*—Mrs. W., æt. 33, was admitted into the Samaritan Hospital on 11th September, 1902, complaining of menorrhagia of one year's duration.

History.—Married three years. Two years ago she was delivered of a full-term child, and was told by her medical attendant at the time that there was a "lump" in the pelvic region. For a year after this the menstrual periods continued normally, but during the last twelvemonth the amount has largely increased. Patient has suffered considerably from sacral pain and from a feeling of weight. Micturition has been very frequent.

Examination.—Vaginal portion directed backwards and situated near the sacral promontory. Uterus anteverted and sinistrotorted. Sound passes $2\frac{3}{4}$ inches. Growing from the posterior uterine wall is a large fibroid, which reaches from the pelvic brim up to an inch and a half above the umbilicus.

Operation.—On opening the abdomen, the fibroid was so like the gravid uterus in appearance and consistence that it was punctured with a scalpel in order to make sure. Supra-vaginal amputation of the uterus was then performed. Only one ovary (the left) was removed. The tumour measures 7 inches by $5\frac{1}{2}$ inches by 4 inches. Circumference, 19 inches.

Patient has made a good recovery.

3. *Carcinoma of cervix uteri—Vaginal hysterectomy.*—Mrs. B., æt. 39, was admitted into the Samaritan Hospital on 1st October, 1902, complaining of metrorrhagia of six months' duration.

History.—Married nineteen years. Six confinements, the last ten years ago. Menstruation regular till six months ago,

but since then there has been profuse metrorrhagia. Between times she has had a profuse, acrid, watery discharge. Cachexia has set in lately.

Examination.—Carcinoma of the cervix uteri, involving the vaginal fornices.

Operation.—On 4th October, the cervix was curetted and formalin applied. On 8th October, vaginal hysterectomy was performed. As considerable difficulty was met with in separating the bladder from the cervix, this part of the operation was left till later. The fundus uteri was brought through an opening in the posterior fornix, and the upper portions of the broad ligaments were ligatured and divided. A transverse incision was then made through the peritoneum on the anterior uterine wall near the level of the isthmus uteri, and the bladder was separated from the cervix. Finally, the bases of the broad ligaments were ligatured and divided.

Patient has made a good recovery.

4. *Tuberculous salpingo-oöphoritis and peritonitis.*—Mrs. S., æt. 32, was admitted into the Samaritan Hospital on 1st October, 1902, complaining of distension of abdomen of eight months' duration.

In January, 1901, Dr. Edgar operated on this patient for a complete tubal abortion. The intact three weeks' ovum was found in the pouch of Douglas. The left appendages were removed, but the right appendages, which were healthy, were left. (Reported in *Glasgow Medical Journal*, April, 1901, p. 291.)

For a year she was very well, but since February she has complained of gradually increasing distension of the abdomen, with gnawing pain in the right lumbar region, and occasional severe attacks of abdominal pain with vomiting.

On examination, the abdomen, was found distended by an elastic mass in the right lumbar region, of the size of a man's head. One peculiarity was that, on percussing lightly, the area of dulness was more extended than with deep percussion.

Operation.—On opening the abdomen on 4th October, a sac of serous fluid was found. The sac-wall was a thin false membrane adherent to the coils of intestine. It was thickly studded over with miliary tubercles, and these were found also on the intestines, and especially on the right uterine appendages. The right appendages were removed, and the peritoneal cavity flushed with normal saline solution.

Patient has done well.

II.—A RETROSPECT AND PROSPECT IN OBSTETRICS AND GYNÆCOLOGY.

By DR. J. NIGEL STARK.

Dr. Nigel Stark's paper appears as an original article at p. 1.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING II.—22ND OCTOBER, 1902.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

ERYSIPELAS.

By DR. D. COUPER.

Dr. Couper remarked that the etiology of erysipelas had been placed on a sound basis, though we might still require to modify our ideas on the bacteriological aspect. The current methods of treatment were not much better than those of our predecessors in the early and middle portions of the last century. Dr. Couper discussed the subject as under:—

1. What is our conception of erysipelas?
2. What are its causes?
3. What is the most appropriate treatment?

He also referred to a new term that had been introduced in medicine—"erysipeloid"—a lesion which may come on in any part of the surface, but has a predilection for the fingers. It occurs mainly among butchers, tanners, and fishmongers. It spreads at its circumference with a distinct border. The only symptom is itchiness.

Speaking of the treatment of erysipelas, he said what was more important than the various remedies was to maintain a healthy condition of the primæ viæ and to feed the patient well. The treatment of erysipelas favoured by Trousseau was to do nothing more than put the patient into as favourable surroundings as possible; feed him even in delirium, keep him comfortable, and do nothing more. This authority says, "When a patient suffering from erysipelas is put under my care, my rule is to abstain from every kind of

treatment." "I cannot recollect," he says, "of losing more than three patients from erysipelas during twenty years. To know when to wait is in our art great knowledge, and prudent waiting explains many successes."

The members of the Society had a lively discussion after the reading of Dr. Couper's paper, the remarks turning largely upon treatment.

MEETING III.—6TH NOVEMBER, 1902.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

I.—CASE OF DIPHTHERIA COMPLICATED BY ACUTE ENDOCARDITIS OF THE MITRAL VALVE.

BY DR. JOHN W. FINDLAY.

Dr. Findlay's paper appears as an original article at p. 27.

Dr. Alex. Robertson referred to the effect of the diphtheria poison in causing paralysis of the heart, as well as post-diphtheritic paralysis of the palate, &c. He concurred in Dr. Findlay's view that the cardiac lesion in this case was caused by the pneumococcus.

Dr. J. Patrick asked what dose of the serum was used, and why forty-eight hours were allowed to elapse between the first and second injections.

Dr. Dunlop wished to know the kind of serum used.

Dr. Findlay replied.

II.—CASE OF TRANSPOSITION OF THE ARTERIAL TRUNKS WITH PATENT FORAMEN OVALE.

BY DR. JOHN PATRICK.

The birth was normal. Symptoms of inherited syphilis were noted at the age of 3 months. Cyanosis became a marked feature. The child took weak turns. The heart's action was rapid. No murmur was heard. At the age of 2½ years the patient was in the Royal Infirmary for eight weeks, and improved during residence. The veins of the arms and neck were full. The apex beat was in the fourth interspace within the nipple line. Respiration was rapid; the

temperature was normal. The treatment adopted included rest in bed, feeding, and anti-syphilitic measures; and the diagnosis suggested was persistence of the ductus arteriosus. In December of last year, Dr. J. Patrick attended the patient for capillary bronchitis, from which he died. After death, the thoracic organs were removed *en masse*.

Dr. Macphail regards the case as unique. Except for the patent foramen ovale, there is complete separation of the two sides of the heart. The aorta arises from the right ventricle; and where the aorta should be, the pulmonary artery comes off from the left ventricle to divide into right and left pulmonary arteries.

The ductus arteriosus was examined for, but found to be torn. It was recognised as a minute fibrous tag.

On opening the heart, great thickening of the right ventricle was apparent. The left ventricle was not so thick as the right.

At the undefended space the septum was tucked in, but no communication existed between the two ventricles. The right auricle was notably large. The foramen ovale was still patent. The cavity of the left auricle was small. The pulmonary veins were as usual. The mitral and tricuspid orifices were well marked.

The circulation in this case allowed of venous blood passing into the right ventricle instead of through the foramen ovale, although a certain amount would pass through the foramen, and this was the only communication between the right and left hearts.

REVIEWS.

Curmina Medici. By WILLIAM FINDLAY, M.D. ("George Ueber"). Paisley: Alexander Gardner. 1902.

ADMIRERS of "George Ueber" will welcome this new volume from his pen. Most of the pieces have already been published in the *Glasgow Medical Journal* or in some other periodical, but the poems deserve a more lasting publicity than is obtained in that way. Much wholesome pleasure may be found by both medical men and laymen in going through this book from beginning to end by the fireside in the evening. From the dedicatory sonnet to the closing poem on

Hugh Miller, whose *Schools and Schoolmasters* has fascinated other readers besides "George UMBER," there is so much of merit that it is difficult to pick out and name any small number of particularly good pieces. "A Spring Monody," "To Opium," "The Parish Doctor," "The Consumptive," "Glasgow Royal Infirmary," and various other poems about doctors, whether Burnsites or not, are items which are perhaps deserving of special attention, though we hesitate to say that they are better than all the others. If the "Therapeutics o' Gowf" can be trusted, opium has a formidable rival in the Scottish game which has conquered the civilised world, and we are safe to assume that we have here a bit of autobiography. Altogether, this volume is sure to maintain the author's reputation, and we heartily recommend it to all; and not least to those who have an eye for the humour and the pathos that hang around the path of a busy and faithful medical practitioner.

Selected Essays and Addresses. By SIR JAMES PAGET. Edited by STEPHEN PAGET, F.R.C.S. London: Longmans, Green & Co. 1902.

OF these twenty-four essays and addresses, many are old and valued friends. Such are senile scrofula, cases that bone-setters cure, stammering with other organs than those of speech, sexual hypochondriasis, dissection wounds, nervous mimicry, and some of the sequels of typhoid fever, which all appeared in *Clinical Lectures and Essays*; and periostitis following strains, spines suspected of deformity, obscure cases of caries of the spine, errors in the chronometry of life, and the use of the will for health from *Studies of Old Case-Books*.

"What becomes of medical students" was explained by Sir James Paget in *St. Bartholomew's Hospital Reports* for 1869, on the basis of his knowledge of what had come of a thousand of his pupils within fifteen years after they entered the hospital. Those who are familiar with the *Memoirs and Letters* know how peculiarly fitted Sir James was to undertake this enquiry. The eighth paper, "On disease of the mammary areola preceding cancer of the mammary gland," is taken from *St. Bartholomew's Hospital Reports* for 1874. The ninth, "On a form of chronic inflammation of bones (osteitis deformans)," originally appeared in the *Transactions of the Royal Medical and Chirurgical Society* for 1877. These two papers are of historical importance, and need not

be further alluded to here. The "Hunterian Oration" for 1877 is a fine account of some aspects of John Hunter's character and work. "Anæsthetics: the History of a Discovery" is an interesting and, in part, pathetic narrative reprinted from the *Nineteenth Century* for 1879. "Elemental Pathology" is the Presidential address given to the Pathological Section of the British Medical Association in 1880. "Theology and Science," an address to the Leeds Clergy School in 1880, gives reasons for the apparent antagonism between theology and science; suggests that increased knowledge may reconcile the two; and advocates charity on both sides. The Presidential address at the opening of the International Medical Congress, 1881, is of interest to us chiefly on account of the importance of the occasion on which it was delivered. "The contrast of temperance with abstinence" is an essay republished from the *Contemporary Review* for 1881, and advocates moderation in alcohol as against abstinence from its use. Now that twenty years have elapsed, and total abstinence has become so common, the essay is seriously out of date, and may mislead those to whom the facts are not accessible. Nowadays, for instance, we have the experience of insurance offices. The United Kingdom Temperance and General Provident Institution, which, while doubtless equalled by two or three companies, is not excelled by any in the kingdom for the soundness of its financial management, reports as follows for the year ending December, 1901:—

	EXPECTED		ACTUAL	
	CLAIMS.	AMOUNT.	CLAIMS.	AMOUNT.
Temperance section,	396	£109,327	272	£75,725
General section,	434	£118,223	391	£96,565

That is to say, in the general section, fully 90 per cent of the expected deaths took place, whereas in the temperance section less than 69 per cent took place. "Temperance" here means total abstinence from alcoholic beverages. The "general" section is made up of all others, and, of course, no respectable company will accept those known to be intemperate. The company whose figures we quote charges the same premium, whichever section the applicant joins, but is able to give larger bonuses to the temperance policyholders on account of the lower rate of mortality among them. As another instance we may mention the Northern Accident Insurance Co., Ltd., which, though not a large company, is admirably managed, very prosperous, and locally situated. For a policy which covers a long list of infectious and other diseases as well as

accident, it gives to total abstainers an immediate abatement of 10 per cent on the premium.

The essay entitled "Experiments on Animals," republished from the *Nineteenth Century* for August, 1881, strikes us as a fair and temperate statement of the attitude taken up by the ordinary humane medical man, who detests cruelty to animals and yet believes that certain experiments on animals yield valuable results, without causing great suffering.

"Some Rare and New Diseases" is the title of the Bradshawe lecture given at the Royal College of Surgeons in 1882.

"National Health and National Work" is an address which was delivered in connection with the Health Exhibition in 1884.

We are glad that Mr. Paget has published this volume. It forms a fitting complement to the fine record of his father's life and labours.

Transactions of the Twenty-third Annual Meeting of the American Laryngological Association. New York: Rooney and Otten Printing Co. 1901.

THESE transactions contain as usual much that is of interest to the laryngologist. We may briefly refer to several of the papers of more general interest.

Dr. J. F. Rhodes writes on chancre of the tonsil. He has obtained from colleagues reports of thirty-five unpublished cases, the details of which he presents in tabulated form. He emphasises the fact that this condition should often be classed as an infectious rather than a venereal disease.

One of the best papers of the year is by Dr. J. L. Goodale, on "Retrograde Metamorphosis in the Faucial Tonsils." He shows that this change begins in the regions where the connective tissue originally predominated, namely, in the trabeculæ and fibres of the capsule. In the sclerosed areas, the endothelial cells of the reticulum exhibit less evidence of proliferation and become fewer in numbers. Later, those forming the germ centre of the follicle entirely disappear, and there is left to represent the follicle merely a heap of lymphoid cells, which progressively decrease in number until finally the former site of the follicle is occupied wholly by connective tissue.

Dr. A. W. de Roaldes recounts a number of experiments he has made in extracting paramagnetic foreign bodies from the air-passages by means of the electro-magnet. The success he

has met with would justify trial of the method in suitable cases.

Dr. Bryson Delavan contributes a valuable historical and statistical paper on the "Treatment of Naso-pharyngeal Fibromata." He contrasts the older methods of operation with those of electrolysis and reduction by the cautery snare, and shows the great superiority of the latter.

Transactions of the Society of Anaesthetists. Vol. IV. London: The Medical Publishing Co., Limited. 1901.

THE above incorporates original papers and discussions contributed to the monthly meetings of the Society last year. The Report of the Anæsthetic Committee of the *British Medical Journal* is reprinted *in extenso*, and furnished the subject of discussion at one of the meetings.

Statistics based on 25,920 cases form interesting reading. In some 13,000, chloroform was used; in 5,000, ether; and in the rest, mixtures of chloroform and ether were used. The cases are separated into two great divisions—the *Uncomplicated* and the *Complicated*.

Under the heading of "Cases of Anxiety," numbering 162, we find that the chloroform cases accounted for 23 per cent; the ether, 21 per cent; and the A.C.E., 22 per cent. This would go to show that the ratio does not differ very markedly in the various anæsthetics. On the other hand, under the classification of "Cases of Danger," chloroform gives a rate of 27 per cent; ether, a rate of 5 per cent; and A.C.E., a rate of 16 per cent.

In the next table are found "Cases of Danger" (including deaths) considered to be entirely due to the anæsthetic. Under chloroform there was a danger-rate of 0.58 per cent; under ether, 0.085 per cent. In other words, for one case of danger under ether there were at least six cases under chloroform.

Where possible, every case was classified in one of three conditions of health—"good," "not good," and "very bad." In patients in "good" health the frequency of danger was: with chloroform, once in every 133 administrations; with ether, once in every 654 administrations. In patients in "not good" health the percentage of danger cases under chloroform was double that of ether, and the same applied to patients in "very bad" health. It is, however, impossible for us to give

even a summary of the exhaustive inquiry set forth in the report, and we refer readers to the original paper published in the *British Medical Journal*, 23rd February, 1901.

Undoubtedly, the results would go to show that ether is a very much safer anæsthetic for general use, but we would like to express our opinion that it is not sufficiently taken into account that ether is the anæsthetic largely employed by experts, whereas chloroform is freely employed by those who, to say the least of it, have not devoted much special consideration to anæsthetics. Our contention is that the larger death-rate under chloroform may be largely accountable to improper methods of administration. We think there is far too much tendency to take sides in the chloroform *versus* ether controversy, for both have their respective uses, and we fully concur in the general conclusion of the committee, that by far the most important factor in the safe administration of anæsthetics is the experience acquired by the administrator.

At the March meeting, Dr. Probyn Williams contributed "A Note on a Modified Form of Schleich's Anæsthetic Mixture," which is composed of chloroform, petroleum, ether, and sulphuric ether. It is used with a modified Skinner's mask. It is pleasant to take. Anæsthesia is obtained without struggling. The pulse remains good, and the respiration deep and regular. Its only disadvantage is that it takes somewhat longer to fully anæsthetise the patient. Dr. Williams is satisfied as to its comparative safety.

Another interesting paper is that of Dr. Dudley Buxton on "The Advisability of the Inclusion of the Study of Anæsthetics as a Compulsory Subject in the Medical Curriculum." Dr. Buxton amply proves his case for the necessity of making anæsthetics a compulsory subject, but at the same time we cannot help extending to the student of the future our sympathy for the increasing burdens gradually being imposed on him.

Maladies de la Voix. Par ANDRÉ CASTEXE. G. Naud, Editeur. Paris, 1902.

THIS volume embodies the substance of several previous papers by the author.

It is one of the most valuable contributions to the subject which we possess, and will form a reliable guide to those whose special study brings them into contact with patients suffering from vocal troubles. The subject is one which has.

been studied very carefully, but unfortunately the practical results are not very far-reaching. The writer has evidently recognised this fact, and impresses on the readers the importance of keeping the voice in good condition.

He has wisely approached the subject from the practical aspect. This alone enables him to avoid many pitfalls, for to the worker in this branch it must be painfully evident that the effect of pathological appearances, as seen by the laryngoscope, can in nowise be predicted as regards the alteration in the quality of the voice.

The book will prove a useful practical guide to those who are engaged in this branch of the profession, and the aim of the writer has obviously been to deal with the practical, rather than the scientific, aspect of the matter.

A System of Physiologic Therapeutics: A Practical Exposition of the Methods, other than Drug-giving, useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vols. III and IV: Climatology; Health-Resorts—Mineral Springs. By F. PARKES WEBER, M.A., M.D., F.R.C.P. Lond., with the collaboration for America of GUY HINSDALE, A.M., M.D. London: Rebinan, Limited. 1901.

THIS great system is being issued in eleven octavo volumes, at a cost of five guineas for the set. American, English, German, and French contributors are taking part in the work, and the whole is edited by Professor Solis Cohen, of Philadelphia.

The first two volumes were on the subject of electrotherapy. The third and fourth, which are now before us, deal with the subject of climatology, including health-resorts and mineral springs; and with the possible exception of Sir Hermann Weber, we doubt if one better qualified than his son, Dr. Parkes Weber, could have been found to write on this subject in English.

Book I is on the principles of climatology, on ocean voyages, and on the Mediterranean, European, and British health-resorts. Book II is on the health-resorts of Africa, Asia, Australasia, and America. It also includes special therapeutics, and contains a special article on the Hawaiian Islands by Dr. T. N. Coen, of New York. Both books are furnished with maps.

In noticing these admirable and interesting volumes, we should like again to commend the industry of the editor.

Professor Solis Cohen not only suggested the arrangement of the volumes and their contents, but read and re-edited each manuscript, and overlooked every proof. Thus in the preparation of the chapters on Central America, South America, and the West Indies, the editor combined articles which had been separately prepared by Dr. Weber and Dr. Hinsdale.

We offer our hearty congratulations to Dr. Cohen and his collaborators on the excellent results of their labours, and the publishers also deserve much credit for their part in the undertaking.

Malarial Fever: Its Cause, Prevention, and Treatment, containing full details for the use of travellers, sportsmen, soldiers, and residents in malarious places. BY RONALD ROSS, F.R.C.S., D.P.H., F.R.S.. Ninth edition, revised and enlarged. Published for the University Press of Liverpool by Longmans, Green & Co. 1902.

THIS little work constitutes Memoir I of the Liverpool School of Tropical Medicine. We are not surprised at the remarkable success it has attained, since for lucidity, terseness, information, and sustained interest we have seldom met with its equal. And when to those merits of the book itself we add the enormous importance of the subject to laymen as well as to physicians, the admirable work accomplished by its author, and the prestige of the recently inaugurated school in which he is a lecturer, it was perhaps to be expected that great public interest would be shewn in this essay. We confidently recommend it to everyone who is interested in medicine or in life in malarious regions.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

Dilatation of the Duodenum in Peripheral Neuritis.—Dr. J. W. Russell reports the following case in the *Birmingham Medical Review* for November, 1902:—The patient, a woman, aged 21, was under observation

continuously for four and a half months, but the first appearance of neuritis set in about six months before that. It commenced with swelling of the ankles, and some shortness of breath on exertion; later, the legs became feeble, so that the patient had great difficulty in walking. When admitted to hospital, there was noted to be generalised wasting of the muscles of both legs, with considerable loss of muscle power. There was foot-drop in both, and patient was quite unable to walk. The R.D. was present in both; plantar and knee reflexes were absent. The arms at this time were unaffected, but, some weeks later, there developed paresis in the flexors and extensors of the fingers.

During all this time there were symptoms of dyspepsia, but they were not such as to attract special attention, and, during the first two months patient was in hospital, she did not vomit more than three times. After this, however, vomiting became much more frequent, and it was then noted that the percussion area of the stomach was enlarged. From this time onwards, the stomach area progressively increased, till ultimately the lower border was well below the umbilicus. The stomach was now washed out daily, with great relief of symptoms, but, later on, the vomiting again returned and persisted till the death of the patient. Both the vomited matter and the fluid drawn off by the stomach tube were extremely foul. The teeth, too, were in an advanced state of decay.

At the *post-mortem*, the stomach was found to be displaced to the left and considerably dilated, its lower border being one inch above the level of the umbilicus. The duodenum was enormously distended. It was separated from the pylorus by a well-marked sulcus, and extended below the margin of the liver for three inches. It touched on the right the eighth, ninth, and tenth ribs, and extended to the left one inch beyond the middle line. The dilatation ended abruptly at the end of the third part of the duodenum, but there was no evidence of obstruction or constriction at this point. The heart was normal, both in its muscles and valves. The great sciatic and anterior tibial nerves showed marked degeneration. The vagi also contained some few degenerated fibres.

In discussing the case, Dr. Russell can give no satisfactory explanation of neuritis. He considers that alcoholism, diphtheria, metallic poisoning, and beri-beri may all be excluded as probable causes; but he thinks the case may possibly throw some light on those cases of acute dilatation of stomach and duodenum which have been hitherto so difficult to explain unless as due to paralysis of the vagus.

Case of Tabes with Arthropathy of the Vertebral Column.

By Dr. W. G. Spiller (*American Medicine*, 1st November, 1902).—The case is said to be certainly one of tabes, and the duration of the symptoms was about five years. The patient was a woman, aged 59, a milliner by occupation, and there is no history of syphilis. The symptoms commenced with sharp pains in the lower limbs, disturbance of the gait, and incontinence of *fæces*. There was impaired sensation in the feet and legs, and loss of patellar and tendo Achilles reflexes. The abdominal and epigastric reflexes were also absent. There was œdema of the feet. The pupils gave no response to light; there was double ophthalmoplegia and atrophy of both optic discs. The vertebral column lesion consisted of a scoliosis and lordosis involving the dorso-lumbar region, and it had been developing gradually during the past four years. There were also arthropathies of the left foot, left knee, and right shoulder, and evidence of a somewhat similar condition developing in the left shoulder.

Kernig's Sign. By Dr. R. D. Rudolph (*American Medicine*, 8th November, 1902).—Kernig's sign was supposed to be a sign found only in cases of meningitis, but the author holds that "if the sign consists (as Kernig and all other writers have described it) in an inability to extend the knee passively and fully while the thigh is at right angles to the body, then I can most

emphatically state that such an inability exists in a very large proportion of persons who have not meningitis. In other words, Kernig's sign is present in a far greater proportion of cases than has been hitherto recognised." He examined for this sign 162 patients of all ages, though mostly children, and many of them quite healthy, and he finds that, in 60 per cent of these, the sign is more or less well developed. He further shows that it does not occur in children living an active life; and that the most potent cause of the sign is recumbency, for, if you place a patient in bed for a few days, he will almost certainly develop the sign, no matter what disease he may be suffering from. It is this factor which explains the presence of the sign in the large percentage of cases just mentioned. Massage has a marked effect in preventing its occurrence in the recumbent, and of lessening it when developed. The sign depends, he says, for its production on a hypertonus of the hamstring muscles, which may be developed not only in meningitis, but in many reflex conditions, and even by lying in bed. The author also suggests, when testing for this sign, that instead of flexing the thigh to begin with, the leg be fully extended at the knee, and, being kept so, be then flexed at the hip-joint. This method gives exactly the same results as Kernig's method, and has the advantage of dealing with only one angle, the size of which can be used as a record of the amount of hypertonicity in the hamstring muscles.

Cases of Ascites due to Thrombosis of the Hepatic Veins. By Dr. Fisher (*Bristol Medico-Chirurgical Journal*, September, 1902).—The patient was a child, aged 3 years, with an abdomen greatly distended with fluid. The liver could be felt four fingers' breadth below the costal arch, and the superficial veins of the abdomen were considerably dilated. There was slight oedema of the legs; the heart and lungs were normal. The child had been quite well till five months before, when she developed whooping-cough, and this lasted from three to four months. The swelling of the abdomen had been present for a month. There was no history of syphilis or alcoholism. At the *post-mortem*, the liver weighed 23 oz. On section, it presented the "nutmeg" appearance, and the larger divisions of the hepatic veins were seen to be thrombosed. Both hepatic veins, where they ended in the vena cava, were completely blocked. A vein, the size of an ordinary penholder, ran from the left branch of the portal vein downwards in the falciform ligament to the umbilicus. Microscopically, the walls of the main divisions of the hepatic veins were everywhere seen to be much thickened, and the clots they contained were in various stages of organisation. In places, the liver cells were largely replaced by dilated capillaries. In places, too, the interstitial tissue round the portal veins was increased, but to no great extent. The other organs of the body were normal. The author discusses the pathology of this condition, and he favours the view of its being due to an infective thrombosis rather than to a syphilitic affection of the vessel walls.

A somewhat similar case to the above is reported by Dr. F. C. Moore, in the *Medical Chronicle* for July, 1902. A woman, aged 25, was suffering from dyspnoea and swelling of the abdomen and legs. The abdomen was greatly distended, and the superficial veins considerably dilated. The symptoms seemed to set in about a month previously, with pain in the upper part of the abdomen, which later on became swollen, and the legs oedematous. There was no history of syphilis or alcoholism.

At the *post-mortem*, the only lesion of any importance was found in the liver. It was small, weighing only 42 oz. The hepatic veins generally were considerably enlarged, and many of those of medium size were occluded by firm thrombi slightly adherent to the vessel walls. The orifices of the right and left hepatic veins, as they joined the inferior vena cava, were quite obliterated. The remains of the ductus venosus presented its usual appearance. The vessel walls were thickened, and the clots were becoming organised. There was but slight increase of connective-tissue in the portal area. The author considers the lesion to be primarily in the vessel walls, and due to some toxic substance, possibly that of syphilis.

SURGERY.

By JOHN PATRICK, M.A., M.B.

Intracapsular Resection of the Prostate.—L. Rydygier (*Centralblatt für Chirurgie*, 11th October, 1902) has for more than two years adopted this method, for which he now claims that it be considered the "normal proceeding for hypertrophy of the prostate."

He found that enucleation—whether by the finger or by blunt instruments—almost invariably opened the prostatic urethra, and, although on this account he lost no patients, the complication hindered the healing of the wound and prolonged the illness greatly. Therefore, in cases of prostatic enlargement where we have old and generally broken down patients to deal with, we must seek the mildest and least energetic procedure; this is found in "intracapsular resection," whereby the prostatic tissue lying near the urethra is left behind.

The posterior surface of the prostate is separated from the perineum. As a rule, the incision along the raphe suffices for this purpose. Rydygier formerly used a transverse curved incision from one tuber ischii to the other, giving undoubtedly freer access to the posterior aspect of the prostate, but it involved a decidedly greater mutilation and was less to be recommended. The superficial structures are incised from the scrotum to near the anal margin. After dividing the perineal fascia, the operator works in the depth of the wound with the finger or blunt-pointed scissors, gradually reaching the posterior aspect of the prostate and freeing it completely. The largest possible catheter has been previously passed down the urethra. While the edges of the wound are firmly retracted, the capsule of the prostate is incised along one side some distance from the middle line. The edges of the capsule are held by catch forceps, and the operator tries to shell out the corresponding lobe of the gland. Sometimes this is easy. In some cases, the capsule is thin and adherent to the gland structure, and therefore tears easily. In other cases, removal of the deeper portions is readily accomplished while the dense capsule remains. The tearing-away process stops at some distance from the urethra, which is identified by the presence of the catheter. Then a long clamp forceps is put on parallel to the catheter, and the remainder of the lobe removed. The same thing is done on the other side.

Rydygier says the operation is generally easy, without much bleeding, and does not take much time. He cannot yet say whether a recurrence may not take place; only clinical experience will teach us.

[The description of the operation is exceedingly loose, and there is a marked absence of detail.]

The Sterilisation of Catgut.—The following three new methods are reported in the *Centralblatt für Chirurgie*, Nos. 41 and 44, 11th October and 1st November:—

1. In Professor Grusdew's clinic in Kasan, dry heat is the principal agent. The catgut is cleaned with *sapo viridis*, placed for two days in ether, then wound on glass rollers in a single layer. The rollers are enveloped in cotton-wool, and heated within two hours up to 150° C. This temperature is maintained for other two hours, and the catgut is finally preserved ready for use in 95 per cent alcohol. The elasticity and durability of the material so treated are good.

2. Fedorow considers, after experiment, that the best chemical methods are with oil of cajeput and oil of turpentine. The catgut is first placed in ether for two days, then for fifteen days in oil of cajeput, or for twenty-one days in oil of turpentine. It is then wound on glass reels, and immersed for another week in the oil. It is again washed in ether, and is preserved in a solution of corrosive sublimate in absolute alcohol, 1 in 1,000, with 10 to 20 per cent glycerine added.

3. M. Claudius reports the third method as one experimented on in Professor Oskar Bloch's surgical laboratory in Copenhagen, and tried with good results in the clinical department. The raw catgut is wound on strong glass rollers, and, without any other preliminary preparations, is placed in a watery solution of iodine and iodide of potassium. The solution is prepared by dissolving the potassium iodide in a small quantity of water, adding to that finely powdered iodine, and diluting this concentrated solution to 1 per cent, that is, one part each of iodine and potassium iodide to 100 of water. After immersion for eight days, the material again, without further treatment, may be used. The superfluous iodine solution may be washed off in 3 per cent carbolic water at the moment when it is required for use, the reel and the remainder of the catgut being stored in the iodine solution. By this treatment, the catgut is rendered perfectly black and of peculiar consistence—at once pliable and elastic, not unlike very thin copper wire.

Sterilisation in this manner is absolutely secure, as has been proved by the author of the method. The catgut is not only sterile, it is even, on account of its being permeated with iodine, actively antiseptic, so that handling does not infect it. Absorption in the tissues takes twelve to sixteen days. Local irritation of the tissues and iodine poisoning are not observed, as pure iodine in the organism quickly forms non-poisonous salts—iodides and iodates.

Appendicitis.—In some recent numbers of the *Centralblatt für Chirurgie*, and in the reports of the German Surgical Congress, various aspects of this subject have been dealt with by different contributors. They are here condensed, and presented in a slightly more systematised form.

I. *Etiology.*—There is little that is fresh to be said under this head. Scholz (Hamburg) quotes the cases of appendicitis from the Hamburg State records for the past thirteen years, and shows (1) that epidemics of influenza in no way contributed to periodic increase of the cases, and (2) that foreign bodies were not considered to play a very important part in the causation of the disease. Jüngst refers (on the slender basis of one observed case) to the possibility of a connection between trauma and chronic appendicitis. A mason was injured by a falling mass of stone, and received severe bruises of the right side of the abdomen, dislocation of the hip, and injury to the sciatic nerve. Two years afterwards, he died of perforation of the appendix with peritonitis. From the conditions found *post-mortem*, Jüngst argued that the appendicitis was the result of the injury to the abdomen.

II. *Diagnosis.*—Rubritius and von Jaksch report a case where the clinical features presented were wholly those of tuberculous peritonitis, and a diagnosis made accordingly. A woman, 33 years of age, was taken ill with diarrhoea, umbilical pain, and gradual swelling of the abdomen. After five months illness, she was admitted to hospital. On admission, there was dullness in the lower abdomen and in the lower portions of the thoracic cavities—puncture in this latter situation revealed nothing—with continued diarrhoea. Tuberculosis of the peritoneum was diagnosed. Paracentesis of the abdominal cavity gave exit to 7½ litres of muddy, greenish, frothy fluid. Irregular tumours were then palpable. After the puncture there occurred fever, violent vomiting, meteorism, and, in six days, death. The autopsy showed a general sero-purulent peritonitis, two ulcers in the appendix penetrating to the peritoneal surface; no tuberculous disease of the intestines, peritoneum, or pleura. The primary lesion was an ulcerative appendicitis resulting in a perityphlitic abscess. The healthy peritoneum responded to the irritation of the encapsulated pericæcal pus with a serous peritonitis, as was ascertained by the puncture. After the paracentesis, the serous exudation became infected from the perityphlitic abscess, so that at the *post-mortem* examination a purulent peritonitis was found. Von Jaksch emphasises the importance of this observation, and suggests that it be designated a case of "appendicitis larvata." An exploratory incision in the right side of the abdomen would have revealed the presence of the perityphlitic abscess, and probably resulted in the cure of the patient.

III. *Post-operative complications.*—Nitzsche reports a case of fatal hæmatemesis. A patient, 62 years old, suffered from gangrenous appendicitis with general peritonitis. Death was greatly hastened by numerous attacks of hæmatemesis. At the *post-mortem* examination, the stomach and jejunum were full of black fluid contents. In the fundus, and especially along the greater curvature of the stomach, he found innumerable pinhead ulcers covered with minute blood-clots. There was a chronic interstitial gastritis, with more or less deep necroses of the mucous membrane. The explanation of the necrosis was that it was due to the action of the toxic products of the bacteria of the septic process in the peritoneum circulating in the blood-stream and poisoning the cells of an already weakened mucous membrane, with resulting death of that membrane in very small patches.

Walch reports a serious intestinal hæmorrhage after an operation in the quiescent period. The stump was ligatured, but not invaginated into the cæcal wall or covered with a peritoneal layer. Three days after the operation, there occurred some feverishness, with right-sided pleurisy. Six days after operation, patient had a sudden attack of nausea, vomiting, and diarrhœa; he passed about 3 litres of blood, and vomited over 300 grams of bloody stomach contents. Beyond the extreme weakness resulting, the progress of the case was not disturbed. The author regards the hæmorrhage as being from the seat of operation, and thinks that the ligature of the stump became absorbed too soon or gave way.

Sonnenburg (Berlin) finds that the chief lung complications of perityphlitis are embolic, from thrombosis—which is common—in the vessels of the inflamed area, whether pus is present or not. In 1,000 cases, he has seen the complication fifty times. Ether anæsthesia plays quite a subordinate part in its production. The emboli must pass through the portal system. Thrombi may be infective. They are to be looked for six to eight days after the operation.

IV. *The question of early operation.*—Sonnenburg condemns operation immediately a diagnosis of appendicitis is arrived at. He advises operation only after two or more attacks soon after one another, three to six weeks after recovery from the latest.

Payr advocates the immediate operation in all cases. He points out that it is dangerous to wait because "an anatomical diagnosis has to be built upon clinical observations," and that "behind an apparently insignificant presentation of symptoms a serious disease may be concealed." So long as we have not yet reached an ideal goal in the diagnosis of appendicular disease, Payr prefers an early operation to uncertainty and sudden unpleasant surprises. The serious cases are many. The early operation is easy, as a rule, in comparison with the difficulties met with in patients who have suffered many attacks. The convalescence is short. The cavity may frequently be closed at once; where it is necessary to insert gauze packing, two or three strong silk stitches through peritoneum, transversalis fascia, and muscular layer may be inserted, to be tightened in about a week after removal of the gauze tampon. The fear of opening the abdominal cavity with pus present in the appendix is greatly exaggerated. Operation may be done even 48 to 60 hours after the onset of the disease. The early operation is the only means whereby we may reach Dieulafoy's ideal—that no one should die of appendicitis.

Sprengel (Brunswick) has collected records of 516 cases, 232 operated on in the interval, and 284 during the attack. The following are his conclusions:—

1. The mortality of the interval operation is 86 per cent, and of the operation during the attack, 19.7 per cent. The interval operation is therefore not absolutely devoid of risk.
2. The results of the early operation, that is, 2 to 24 hours after the onset of the attack, speak for the operation, but they are not numerous enough to say whether there is any peculiar risk in it.
3. The results of the early operation are happier than those of the late operation—17 per cent mortality as against 20 per cent in the late operation. The author's own experience embraces 17 early operations with one death nine weeks afterwards from pericarditis.

DISEASES OF THE SKIN.

By J. WYLLIE NICOL, M.B., C.M.

Lupus Erythematosus: a Clinical Study of 71 Cases. By Drs. J. H. Sequeira and H. Balean (*British Journal of Dermatology*, October, 1902).—This is an analysis of the results of the systematic examination of cases which have recently been under observation at the London Hospital. It includes an account of a fatal case, with autopsy. The following is a summary of the points dealt with:—

1. *Sex*.—Of the 71 patients, only 11 were males, the proportion therefore being 84·6 per cent females and 15·4 per cent males.

2. *Age*.—In 8 cases the disease appeared between ages of 11 and 15, in 44 between 16 and 30, in 12 between 31 and 40, and in 7 between 41 and 58.

3. *Varieties of the Disease*.—60 are classed as "circumscribed or discoid" cases, and 11, all females, as "disseminated" cases. Two of the discoid cases presented the features of Crocker's "telangiectic" type.

4. *Tuberculosis in the Family*.—In 34 cases there was a history of pulmonary tuberculosis in the family. Owing to the difficulty of obtaining accurate information, statistics of other tubercular affections were omitted from the inquiry. Amongst the 37 with no family history of phthisis were two sisters, in whom the erythematosus appeared at the age of 26 years.

5. *Evidence of Tuberculosis in the Patient*.—Careful examination revealed evidence of lung, gland, or joint tuberculosis in 18 cases, or 25 per cent. There was no evidence in any of abdominal or renal tuberculosis.

6. *Relationship of Tuberculosis to the Variety of the Disease*.—The disseminated form was associated with tuberculosis to a much greater degree than the discoid. *Disseminated*.—Of the 11 cases 5 had phthisis, and 2 of these also strumous glands; 3 others had strumous glands; the remaining 3 were free. A history of phthisis in the family was found in 8 out of 10. No family history was obtainable in the remaining case. *Discoid*.—Of the 60 cases there was evidence of phthisis in 3, strumous glands or abscess scars in 7, and tuberculosis of hip-joint in 1—i.e., tuberculosis in 18 per cent. In 24, or 40 per cent, there was a history of tuberculosis.

Here the authors refer to Pick's observations upon the tuberculin reaction in lupus erythematosus discoides, and to his conclusion that we have no right to look upon it as a tubercular disease.

7. *Acroasphyxia, Chilblains, &c.*—Acroasphyxia was present in 1 male and 6 females. A history of chilblains was found in 3 males and 9 females.

8. *Other Diseases*.—No definite association was noted.

9. *Place of Onset*.—*Discoid*.—Information was obtained in 47. In 18 disease began upon the "flush" area of cheeks, in 15 on the nose, in 3 near the eye, in 3 on the ears, in 3 on the scalp, in 2 in front of each ear, in 1 round mouth, in 1 on forehead, and in 1 on chest. *Disseminated*.—The face was the first part attacked.

10. *Limitation of Areas*.—The authors consider that the gradual enlargement of the spots in the discoid cases until a certain limit has been reached, and the involvement of identical areas by the coalescence of numerous small foci in the disseminated cases, suggest an anatomical basis. As the areas do not correspond with the distribution of the vessels, they are compelled to explain them by the influence of the vasomotor nerves. They suggest that lupus erythematosus may be a clue to the vasomotor areas of the skin. In their fatal case, the Gasserian and spinal ganglia were examined, with negative results.

11. *Influence of Local Irritation*.—In one case poulticing was followed by small patches, their nature being confirmed microscopically. In two, the light treatment was followed by an increase in size of the spots; in another, scratching started a fresh area.

12. *Albuminuria in Lupus Erythematosus.*—The urine was examined in 27 cases. *Discoid.*—Of the 17 cases examined, albumen was detected in 2 only. In one it was attributed to mitral stenosis, in the other to chronic interstitial nephritis. *Disseminated.*—Of the 10 cases examined, 5 had albuminuria. Of these, 2 had a history of scarlet fever, one being the fatal case; the nephritis found *post-mortem*, however, appeared to be of recent origin. It was significant that in the half of the disseminated cases albuminuria was found, and especially where the disease was active; while in the discoid and more chronic form there were only 2 cases of albuminuria, one of which was explained by the cardiac lesion, and the other by the interstitial nephritis.

13.—*Notes of the Fatal Case.*—The patient was a female, aged 18. Her maternal grandmother died of phthisis, but otherwise the family history was good. She suffered from measles and whooping-cough in childhood, and when 12 years old had scarlet fever. The attack was said to be mild, and she left the fever hospital at the end of six weeks. At the age of 16 she is said to have had an attack of "rheumatism."

In the latter part of 1900 a red spot was noticed on her nose, and in October, 1901, a small scaly patch appeared on the left cheek, and in the course of a month the eruption had extended over a large part of the face. Patient felt ill, but had no special symptoms. New patches continued to appear, the scalp, trunk, and hands being involved. In February, 1902, she complained of headache and abdominal pain. Swelling of the legs set in, and the urine contained blood. Early in March she was admitted to hospital.

On admission there were large areas of eruption on the nose, cheeks, and chin, and smaller patches on the right upper eyelid, eyebrows and forehead, left ear, and behind both ears. All were slightly raised, of a dull red colour, and covered with fine brownish scales. In the oldest lesions on the cheeks there was atrophy of the skin. There were also small patches on the chest, abdomen, back, and fingers. The patient complained of dyspnoea and abdominal pain. The respirations were 28 per minute. There was impaired movement of upper part of chest on left side, and dulness at left apex posteriorly. A few moist râles were heard at bases. Pulse numbered 66; its tension was slightly raised. Cardiac impulse was just outside nipple line. The second sound was accentuated over the aortic area. There was no enlargement of liver or spleen. There was oedema of lower limbs. Urine measured 46 ounces per diem, and contained albumen, blood, granular and hyaline casts. Optic fundi were normal. For some months there had been amenorrhoea. Temperature was normal.

During the next two weeks she gradually became worse. On 20th March temperature rose to 104°. There was vomiting, pain in left side, and soon fluid appeared in left pleura. On 28th back had become oedematous, and there was a little fluid in abdomen. Eight ounces of semi-purulent fluid drawn from left pleura contained pneumococci. Urine fell to 12 ounces daily. Fresh spots continued to appear on skin. On 30th she had a sudden attack of pain in chest, with severe dyspnoea, and died.

At the *post-mortem* a further patch of skin eruption was found on right labium majus. The left pleura contained thick creamy lymph. The left lower lobe showed red hepatisation. In the right lower lobe was a wedge-shaped infarction, with recent pleurisy over it. At the left apex was a small calcareous nodule, and over it the pleura was thickened and adherent to chest wall. There was no active tubercle in the lungs. Heart weighed 11 ounces. Pericardium contained slight excess of fluid. The right ventricle was filled with *ante-mortem* clot. The valves were healthy, but there were minute patches of atheroma at the root of aorta. The abdomen contained slight excess of fluid. Spleen and liver were normal. The right kidney weighed 10½ ounces, and left, 12½. Both were in condition of parenchymatous inflammation. The capsule peeled readily. Microscopic examination showed the condition to be a glomerulo-tubular nephritis of a fairly acute type, with slight increase of the connective tissue. "The condition was not compatible with a nephritis of long standing, such as would have been found had the

affection dated back to the scarlatina six years before." The brain and spinal cord showed no naked eye abnormality. Both Gasserian ganglia and several spinal ganglia were examined microscopically, with negative results. Examination of skin from acute patches showed extensive perivascular infiltration, with a great number of mast cells. There was no evidence that the sebaceous glands were the seat of the disease.

Conclusions.—"The inflammatory nature of the lesions in lupus erythematosus, and their symmetrical distribution, suggest a circulating poison or poisons. The hypothesis that this toxin is of tubercular origin in all cases does not appear adequate." From the analysis of their cases, the authors consider that we have no right to say that lupus erythematosus discoides is tubercular. On the other hand, they find "strong evidence in favour of lupus erythematosus disseminatus being of tubercular origin, or, that the presence of tuberculosis modifies the course of the disease, and intensifies it." They point out that lupus erythematosus is rarely seen in consumption hospitals, where one might expect to find it frequently if it were solely due to toxins of tubercular origin. They believe the albuminuria in the five disseminated cases to be of toxic origin, and to be due to a greater toxicity in these more active forms of the disease.

The situation of the lesions appeared to be determined by (1) nervous influence—the peculiar limitation of the areas supporting the angioneurotic theory; (2) a feeble circulation; (3) local irritation.

MATERIA MEDICA AND THERAPEUTICS.

By JOHN M. COWAN, B.A., M.D. CANTAB.

Treatment of Acne by the X-rays. By Campbell (*Journal of the American Medical Association*, 1902, vol. ii, p. 313).—The author gives details of fifteen cases of acne which he treated by exposure to the x-rays, the sittings lasting for ten to twenty minutes, and being repeated (usually) thrice weekly; the duration of the treatment varied from two to four months. In fourteen cases (nine of which were of two years' standing) cure was complete; in one case, of seven years' standing, it was only partial.

The Treatment of Lightning Pains in Tabes. (*Gaz. des Hôp.*, 1902, p. 765).—Negro recommends santonin in the treatment of lightning pains; in eight cases the pains ceased entirely after its administration, and in two were notably relieved; in one case no improvement resulted. Combemale and de Chabert corroborate Negro's results.

0.15 centigramme of santonin should be given daily until chromopsia is manifested.

Santonin seems to have no action in neuralgia.

The Treatment of Pneumonia. By Wells (*Journal of the American Medical Association*, 1902, vol. i, p. 163).—The author points out that pneumonia is caused by a specific pathogenic organism, the pneumococcus. "One of the early and persistent symptoms of pneumonia is capillary paresis. The blood with each ventricular systole is forcibly impelled through the capillaries into the veins. It results from this that the arterial system is underfilled, while the venous system is overfilled with blood; and the fluids without the blood-vessels, not receiving fresh supplies by osmosis through the capillary walls, are more or less stagnant. . . . It necessarily follows that these tissues will be insufficiently nourished, and be exposed to the deleterious influences of being constantly bathed in a solution of their own cellular waste." To meet these indications "in the ordinary case" the author gives a mercurial

early in the disease, followed by a saline; bleeds the patient to 500-750 c.c.; induces a "rather free" perspiration; gives fluids freely; and administers digitalis and adrenalin hydrochlorate.

He points out that while all cases with a marked leucocytosis do not recover, the bulk of those cases which show no leucocytosis, die; and to meet this indication gives nucleinic acid "in every case where satisfactory leucocytosis fails to appear." (What is a satisfactory leucocytosis?)

To meet the disappearance of the chlorides from the urine, he gives all food (milk included) well salted, and as many saline enemata as can be retained.

Occasionally, he says, uncontrollable foetid diarrhoea appears, and as a prophylactic measure he insures the regular thorough evacuation of the bowels, and the supply of proper food; and he administers "some efficient intestinal antiseptic, as, *e.g.*, salol."

Oxygen he gives freely and early in the case, "at the very beginning of that slight but steadily progressive increase in frequency and shallowness of breathing." Strychnine, camphor, caffeine, and morphia are also, apparently, freely employed by him.

Purgation, bleeding, sweating; saline injections by the rectum; digitalis, adrenalin hydrochlorate, salol (perhaps nucleinic acid, &c.) and salted food by the mouth; oxygen inhalations; as a routine in every case of pneumonia, are surely heroic treatment. Let us hope that some of the author's patients recover.

Creosote in Pulmonary Phthisis. (*Journal of the American Medical Association*, 1902, vol. i, p. 291).—Burroughes has used creosote largely during the past nineteen years. He insists on the necessity of employing the pure drug, which, he says, if given with cod liver oil, whisky, or cream, after food, has no irritating or nauseating properties; on the contrary, digestion is improved by its administration. He gives large doses, 20 to 100 minims thrice daily, which are continued for two years after symptoms have disappeared. He also gives 20 to 25 minims, in some hydrocarbon oil, by intra-laryngeal injection.

Rochester gives the drug in even larger doses, as much as 4 c.c. thrice daily, and considers it of great value. He gives it in freshly-made weak mucilage, and has never seen any bad symptoms arise from its use.

Bonney only uses small doses; he considers that it is especially indicated in cases with purulent expectoration, while, in patients who expectorate but little, it may be harmful.

The Treatment of Epilepsy.—Toulouse advocates the use of a dietary which contains a minimum of sodium chloride, in addition to the administration of bromides, and his statistics seem to prove the efficacy of the treatment.

The action of medicines, he says, is due to their absorption by the tissues, and their effect should be increased if the appetite of the tissues for them is more intense. A diminution of the quantity of alkaline salts in the food should therefore lead to increased appetite for alkaline salts when administered for therapeutic purposes, and, in consequence, to increased therapeutic effects.

Under ordinary circumstances, a man takes about 14 grms. of salt per diem, but 2 to 3 grms. are all that are requisite for health, and Toulouse takes 2 grms. as the maximum in his treatment.

A milk or vegetarian diet will contain little more than this quantity, but such dietaries can rarely be continued indefinitely. Meat contains little salt, and so can be added to the food, if care is taken to avoid the addition of salt in the process of cooking. Bread, in particular, must be avoided. Toulouse finds that patients on such diets require much smaller quantities of bromides to prevent the occurrence of symptoms, than are needed if no restriction is placed upon the ingestion of salt. He states that toxic effects are much more easily produced, and that 4 grms. of sodium bromide is, as a rule, the

maximum dose that can be taken in the day without injurious symptoms. The efficacy of the treatment does not depend on either factor alone, as a non-salted diet has no effect on the frequency of attacks, while a resumption of ordinary food, maintaining the same quantity of bromide per diem, always results in an increase in the number of fits. The effects of the treatment are not fully manifested for a week or ten days, until the excess of salt has been excreted.

Roux, Necker, and Rumpf have reported favourably on this mode of treatment, and Halle and Baronneix have used it with success in children.—(*Gaz. des Hôp.*, 1900, p. 97; 1902, p. 1152; *Thèse de Paris*, Laufer, 1901; *Bull. de la Soc. Méd. des Hôp.*, 1900, p. 12; *C. R. Acad. des Sci.*, 1899, p. 850.)

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

Hydatid Mole and its Relation to Deciduoma Malignum.—Dr. Berry Hart (*Journal of Obstetrics and Gynaecology of the British Empire*, November, 1902) considers the question raised by the frequency with which hydatid mole precedes deciduoma malignum. He adheres to the opinion that the syncytium and Langhans' layer are both fetal in origin, and in the hydatid mole he finds an increase in both, while in normally advancing pregnancy they diminish. In other words, in the hydatid mole the undifferentiated tissues increase, while in the normal pregnancy the tissues become more highly organised. His theory is that this effect in the normal tissue is due to the action of the fetal thyroid, while its absence in the mole is due to the embryo having ceased to develop before the appearance of the thyroid. This absence of thyroid influence permits the syncytium and Langhans' layer to retain their power to break through and penetrate the tissues, to enter the blood-vessels and give rise to metastases. We cannot, however, yet distinguish between ordinary and destructive hydatid moles, nor can we as yet ascertain by examination of a mole whether or not deciduoma will follow it, and these are the points now requiring attention.—J. K. K.

Cæsarean Section.—W. J. Sinclair (*Journal of Obstetrics and Gynaecology of the British Empire*, September, 1902) reports a successful case done under the influence of cocaine injected into the subarachnoid space by a needle inserted between the laminae of the fourth and fifth lumbar vertebrae. The anæsthetic was administered in this way because the patient suffered from "chronic bronchitis, attacks of asthma, and some indefinite affection of the heart, probably alcoholic."—J. K. K.

Puerperal Eclampsia.—Hermann Müller (*Arch. f. Gyn.*, Bd. 66, H. 2), after an elaborate discussion of the various theories regarding the origin of eclampsia, comes to the conclusion that it is due to a general poisoning; that the poison is absorbed from the uterine cavity; that it is generated by the action of microbes upon the decomposable material (decidua, &c.) present there; that it is the same poison as gives rise to feverish conditions in pregnancy and the puerperium; and that its peculiarity arises from the sudden absorption of large quantities of this poison (*cf.*, the effect of strychnine in large doses), while in feverish conditions the absorption is less rapid, and the organism has time to adapt itself to the poison. The lesions in kidney, liver, and elsewhere are effects of the poison, like the eclampsia itself, and are not the causes of the convulsions.

This theory suggests as the essential treatment, not the use of chloroform and other narcotics, which Müller considers injurious, but the rapid emptying

of the uterine cavity, the removal of the poison by diaphoresis, purgation, and venesection, and the infusion of saline solution to dilute the blood and lower the percentage of the poison.

Walter Albert (*cod. loco*) has come to very much the same conclusions as Müller. His theory is:—"Eclampsia represents an intoxication caused by the products of the microbes of the decidua. Eclampsia, therefore (like disease of the placenta, &c.), depends upon latent microbic endometritis in pregnancy." He has examined the decidua in six cases. In two of these microbes were found. In a third, also, microbes were found, but might have been derived from the vagina. In the other three cases, while bacteria were not found, there were changes indicating local infective processes. He sums up by saying, "In all cases of eclampsia hitherto examined, severe disease of the decidua has been found."

R. H. Bell (*Journal of Obstetrics and Gynecology of the British Empire*, September, 1902) reports a case of eclampsia in which a *post-mortem* examination was made. The liver seemed in early stage of acute yellow atrophy, and there was jaundice before death. On the anterior margin were two infarcts, wedge-shaped, and of recent origin. Toxicity of blood withdrawn during life seemed considerably increased. No examination of decidua seems to have been made.—J. K. K.

Myoma and Pregnancy.—T. A. Helme (*Journal of Obstetrics and Gynecology of the British Empire*, September, 1902) reports a case of abdominal total hysterectomy at the fourth month of pregnancy, and another at the third month, for fibroids in the pelvis, and contrasts the complete success of these two cases with lamentable results that followed induction of labour at the fifth month of pregnancy for the same condition.

E. J. Maclean (*cod. loc.*) reports a case of myoma which, on being examined during an exploratory laparotomy at about the fifth month of pregnancy, seemed to lie in the pelvis between the layers of the right broad ligament, and which, in about seven weeks after the operation, had risen entirely out of the pelvis. Ultimately a natural labour occurred at term.—J. K. K.

Hydorrhœa Gravidarum.—Georg. Fleck (*Arch. f. Gyn.*, Bd. 66, H. 3) reports a case of hydorrhœa gravidarum in which the discharge was amniotic fluid. The condition found after birth of the child at the eighth month—the discharge, which was usually mixed with blood, having begun in the third month and gone on continuously—showed that the membranes were represented merely by a band attached near the edge of the placenta, and that, in fact, the fetus had for five months been developing in the uterine cavity without its covering of membranes.

Related to this are no doubt the important facts that the child, after birth, retained the fetal attitude, and that three months after birth the joints of the limbs, especially the knee- and elbow-joints, could not be straightened.—J. K. K.

Kraurosis Vulvæ.—Wilh. Darger (*Arch. f. Gyn.*, Bd. 66, H. 3) has made a careful examination of the tissues removed from the vulva. In the epidermis he found an increase in the horny layer and decrease in all the rest, but the characteristics changes were in the true skin. Here he found—(1) Marked œdema of the papillary body, the lymph spaces being enormously dilated; (2) associated with the œdema a disappearance of the elastic fibres, muscle bundles, and cellular elements generally in the papillary body, and to a less degree in the deeper layers of the cutis; (3) great abundance and fulness of the vessels in the reticular layer and in the subcutaneous tissue. He is disposed, accordingly, to regard the vascular network of the cutis as the primary seat of the disease, and the other conditions as secondary results.

If this be the nature of kraurosis, it is to be contrasted with such conditions as pruritus vulvæ, which arise from irritating and, almost without exception, infective processes on the superficial layers of the skin.

DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B., C.M., F.R.S.E.

Direct Illumination of the Respiratory Passages.—The first advances that followed Garcia's work when he gave us the perfected laryngoscope were due to the introduction of the incandescent lamp. Nearly twenty years ago, quite a number of new instruments appeared for examining the nose, ear, pharynx, and larynx. About seven years ago, Kirstein introduced a method by means of his autoscope which, in a certain sense, was reverting to the earliest attempts at direct illumination of the larynx. This instrument has never become popular, largely owing to the fact that there is a considerable amount of inconvenience occasioned during examination. Killian, however, during the past two or three years, has been steadily working in this direction. His demonstration last summer to the Laryngological Section of the British Medical Association was a revelation to many. He demonstrated his methods on patients whom he had not seen before, and not only showed the larynx, but the trachea and some ramifications of the bronchial tubes, cocaine alone being administered. For diagnostic purposes and the extraction of foreign bodies, much may be expected from this brilliant worker's methods in the future. Some have wrongly attributed Rosenheim's, Mickulicz's, and others' work in the œsophagus to Killian. By the combination of these instruments, diagnosis of both trachea and œsophagus should be much more easily made in the future.

Tonsillar Abscess.—D. Haviland Hall (*Lancet*, 27th September, 1902) records a case of death from bursting of a tonsillar abscess. The patient, a young woman, had been suffering from quinsy, and she died suddenly. At the necropsy, the larynx was found to be full of pus.

Dr. Lyons (*Lancet*, 20th September, 1902) records another case of the same in a patient, a man aged 28. In this case, after death, the larynx was also found to be full of pus.

Hæmorrhages in Operation upon the Tonsils and Adenoids, &c.—Dr. Francis Stewart (*Lancet*, 15th November, 1902) records the death of a boy, aged 7, after an operation for enlarged adenoids and tonsils. The operation was performed in the ordinary way, although bleeding was more than usual at the time. Extravasations took place shortly after the operation, and, as dyspnoea set in, intubation, and afterwards tracheotomy, were resorted to. The patient died thirty-two hours after operation. At the *post-mortem*, the pharynx, larynx, and tissues of the neck generally were infiltrated with blood. The patient is believed to have been hæmophilic, and it is to be noted that there was no hæmorrhage from the tonsils on either side, or from the naso-pharynx, but the difficulties arose from the extravasations.

Dr. M'Reynolds (Amer. Laryn., Rhin., and Otol. Soc., June, 1902) records a case of severe hæmorrhage, two hours after operation in the nostril, after the use of adrenalin. An exostosis rather high up in the nostril had been removed. Packing of the posterior nares controlled the bleeding.

Climate in Laryngeal Tuberculosis.—Dr. Levy (Amer. Laryn., Rhin., and Otol. Soc., June, 1902) read a paper on "The Effect of Climate on Laryngeal Tuberculosis, with Special Reference to High Altitudes." The writer said that comparatively few writers dwelt upon the climatic treatment of laryngeal tuberculosis. Those who had studied the subject superficially were almost unanimous in condemning high altitudes. Without preconceived notions, he had conscientiously studied complete records of 215 cases, and now desired to present a preliminary communication on this

topic. High altitudes alone were of comparatively little importance, pure air being the most essential element in the treatment of laryngeal as well as of pulmonary tuberculosis. Such air was found in sparsely-settled high altitudes and on the sea. The pathological picture of laryngeal tuberculosis was one of complete relaxation and anæmia, not of inflammation. He had already called attention to the injurious effect of high altitude on acute tuberculosis, particularly of the pharynx. It was well known that 30 per cent of all cases of pulmonary tuberculosis show sooner or later laryngeal involvement. In the cases developing both lung and throat lesion in Colorado, the throat lesion manifested itself forty-eight weeks later than in those originating elsewhere. Again, in cases developing the lung lesion elsewhere and the throat lesion in Colorado, the throat lesion occurred on an average 62·3 weeks later than in other regions. —(Abstracts, *Jour. Laryn., Rhin., and Otol.*, September, 1902.)

Books, Pamphlets, &c., Received.

- The Guide to South Africa**, Edited by A. Samler Brown and G. Gordon Brown. (1902-1903 Edition.) London: Sampson, Low, Marston & Co. 1902. (2s. 6d.)
- The Diseases of Infancy and Childhood**, for the use of Students and Practitioners of Medicine, by L. Emmett Holt, M.D., LL.D. With 225 Illustrations, including 9 Coloured Plates. Second Edition, Revised and Enlarged. London: Henry Kimpton. 1903. (25s. net.)
- The Prevention of Disease**. Translated from the German, with an Introduction by H. Timbrell Bulstrode, M.A., M.D. Cantab., D.P.H. Westminster: Archibald Constable & Co., Limited, 1902. (31s. 6d. net.)
- Cancers and Other Tumours of the Breast: Researches showing their true Seat and Cause**, by Charles Creighton, M.D. With 24 Lithographic Plates. London: Williams & Norgate. 1902. (20s. net.)
- Cancer and other Tumours of the Stomach**, by Samuel Fenwick, M.D., F.R.C.P., and Soltau Fenwick, M.D., M.R.C.P. London: J. & A. Churchill. 1902. (10s. 6d.)
- Reports of the Society for the Study of Disease in Children**. Vol. II. Edited by George Carpenter, M.D. London: J. & A. Churchill. (12s. 6d.)
- The Treatment of Fractures**, by Charles Locke Scudder, M.D. Third Edition, thoroughly Revised. With 645 Illustrations. London: W. B. Saunders & Co. 1902. (19s. net.)
- Atlas and Epitome of Traumatic Fractures and Dislocations**, by Prof. Dr. H. Helferich. Authorised Translation from the German. Edited by Joseph C. Bloodgood, M.D. Fifth Edition, Revised and Enlarged. With 216 Colored Illustrations on 64 Lithographic Plates, and 190 Figures in the Text. London: W. B. Saunders & Co. 1902. (13s. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 20TH DECEMBER, 1902.**

	WEEK ENDING			
	Nov. 20.	Dec. 6.	Dec. 13.	Dec. 20.
Mean temperature, . . .	46·2°	36·6°	32·9°	45·8°
Mean range of temperature between day and night, . .	11·2°	8·9°	13·3°	10·1°
Number of days on which rain fell,	7	4	2	?
Amount of rainfall, . ins.	0·71	0·82	0·02	2·20
Deaths registered, . . .	293	283	337	314
Death-rates,	19·6	19·0	22·6	21·1
Zymotic death-rates, . . .	1·8	2·7	3·0	2·5
Pulmonary death-rates, . .	5·6	5·2	6·9	7·3
DEATHS—				
Under 1 year,	68	68	86	79
60 years and upwards, . .	44	63	80	62
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	1	2	4	2
Scarlet fever,	1	4	...	2
Diphtheria,	1	7	6	2
Whooping-cough,	10	11	20	22
Fever,	2	7	2	4
Diarrhoea,	11	10	12	5
Croup and laryngitis, . .	2	...	1	...
Bronchitis, pneumonia, and pleurisy,	59	62	78	78
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	17	28	15	11
Erysipelas,	34	29	25	22
Scarlet fever,	52	60	47	44
Typhus fever, . . . . .	..	1	1	...
Enteric fever,	19	16	11	13
Continued fever,	1	...	1	...
Puerperal fever,	1	...	1	5
Measles,*	36	67	55	45

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 24th December, 1902.

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ORIGINAL ARTICLES.

SNAKE VENOMS: THEIR PHYSIOLOGICAL ACTION
AND ANTIDOTE.¹

BY GEORGE LAMB, M. D. GLASG.,
Captain, Indian Medical Service.

(From the Research Laboratory, Bombay.)

WHEN your Honorary Secretary, Dr. Hunter, asked me if I would read a paper before this Society, I readily acceded to his request. I was, however, soon met with various difficulties. In the first place, on looking over the agenda of this meeting, I saw that Dr. Hunter had entitled the subject matter of my remarks as "Some Recent Work on the Action of Snake Venoms." Well, this recent work has been occupying my attention almost exclusively for the last two years and more. I have, therefore, to compress into the space of a short paper the results of this work. You will understand, then, that I cannot hope to give you more than a summary, and that a short one, of the observations which I have made during this period. For the details of these observations, I must refer those of you who are interested to the various papers which I have published from time to time. In the second place, I

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 7th November, 1902.

have to remember that I am dealing with a subject which is full of what I might call technicalities, a subject possessed of a language peculiar in a way to itself, known only to the workers on the subject, and of which the medical man in general has little or no cognisance. In the third place, investigators have by no means arrived at any absolutely definite conclusions as to the exact methods by which the various snake poisons cause their lethal actions; that they do differ in this respect there can, however, be no possible doubt. It is, therefore, you will readily imagine, a subject around which controversy still runs high. Every day new facts are being brought to light, new hypotheses are being expounded, and old theories exploded. Finally, I have also to remember that to some of you at least the subject is a new one, that it may be the extent of your knowledge is limited to appreciating that there are some snakes which secrete a poisonous saliva, while there are others which have not this function. I have, therefore, to crave your indulgence, especially so as, for the few weeks I have been in this country, my time has been so fully occupied as to prevent me from making any written preparations for this paper. It is not my intention to enter into the question of the differences by which naturalists know a poisonous from a non-poisonous snake. In fact, I am not competent to do so. I propose to confine my remarks to a short description of the physiological action of the different venoms with which I have worked, and also to say something about the antidotes to these poisons.

There are many poisonous snakes in India. Of these, however, only four or five varieties can be said to offer any danger to man. Naturalists divide these into two groups, viz., (1) colubrine and (2) viperine. In the colubrine group of poisonous snakes, we have (1) the cobra, (2) the king cobra, (3) the krait family, of which there are at least four varieties, the best known being the *bungarus ceruleus* and the *bungarus fasciatus*. In the viperine group of poisonous snakes dangerous to man, we have (1) *daboia Russellii* or chain viper, and (2) *echis carinata* or porrrsa.

At the outset, however, I should like you to understand that my remarks will be, for the most part, confined to a summary of the observations which I have made with the poisons of the two most deadly of these snakes, viz., the cobra and the *daboia*. I shall also have a few words to say about the venom of one of the krait family, viz., *bungarus fasciatus*; but my experiments with this poison are by no means complete. I have little or no experience of the poison of the king cobra,

or of that of the echis, nor do I know of any thoroughly trustworthy scientific observations which have been made with the poisons of these two species. And let it be clearly understood that, although the kraits and the king cobra are colubrine snakes, and echis a viper, it by no means follows, as I have good reason to know, that the poisons of the krait family and of the king cobra have the same physiological action as the venom of the cobra, or that of the echis the same as the venom of the daboia, nor even that the poison of one variety of bungarus is the same as that of another variety of the same family.

The poison of snakes is secreted by two glands, one on each side of the head. These glands are the homologue of the parotid salivary glands of other vertebrates. They are situated behind the orbit, quite superficially beneath the skin. They are, in the case of the cobra, about the size of, and somewhat resemble in shape, an almond. Each gland is enclosed in a dense fibrous capsule. This capsule serves as an attachment to the muscle, which, as we shall see, compresses the poison out of the gland. The muscle is the masseter muscle. It assists powerfully in closing the lower jaw. In a dissected specimen, you will see that it is divided into two portions. The upper portion, arising from the skull along a curved line behind and above the orbit, passes downwards and backwards to be inserted along the upper and posterior margin, as well as to the external surface of the capsule; it envelopes the gland above and behind. The lower portion arises from the internal surface of the gland capsule at the back part, and, widening out, passes down to be inserted into the lower jaw. When this muscle contracts, as it does powerfully when the snake closes its jaws on its prey, you will understand how the poison gland is, as it were, forcibly wrung between these two portions of the muscle, much in the same way as a housewife wrings a wet cloth between her hands. In this way, the poison is ejected into the duct at the right moment, viz., when the fangs are buried and ready to convey the death-dealing dose. From the front portion of the gland, the poison duct passes forward, runs along the lower margin of the orbit, and opens on the top of a small papilla which is situated at the base of the fang on the anterior wall of a sheath of mucous membrane, which embraces the fang. This duct, therefore, is not directly continuous with the canal of the poison fang. I regret that time does not permit of me explaining to you how it comes about that no leakage of the poison takes place at this junction.

The fang, as you no doubt know, is nothing more or less than a tooth, which has undergone a special development, so that it may act as a functional tube to convey the poison into the wound which it inflicts. Let us look for a moment at this development. The structure of a young poison fang is the same as that of a tooth, viz., a central cavity, the pulp cavity, containing vessels and nerves, and an outer hard shell covered over with enamel. During development, this becomes flattened out, and soon a groove appears on the anterior surface. This groove is limited on each side by a ridge. Then these ridges, by a process of folding over of the whole tooth, approach one another anteriorly, and ultimately are brought into contact and coalesce. There are therefore, now, two complete cavities in the poison fang, viz., (1) the original pulp cavity, and (2), the new poison canal, situated anteriorly to the pulp cavity. But at the base and near the point of the fang, this folding over is not completed. We have left there the opening by which the poison enters the fang from the duct, and the opening by which it leaves the fang. These openings, you will understand if you have followed my description of the development, are not at the two very extremities of the fang, but are situated anteriorly a little short of the base and of the point respectively. I pass round some fangs of the *daboia*, so that you may see this point more clearly.

The fangs which are functioning are completely ossified to the superior maxillary bone. While the mouth is shut and at rest, they lie along the roof of the mouth, pointing almost straight backwards. Again I regret that time does not permit of me making clear to you the somewhat complicated and interesting mechanism by means of which the so-called "erection of the fangs" takes place when the animal strikes.

All the older experiments with snake venom were made by allowing the snake to bite some animal or other. This method of experimentation is, as you can well understand, an exceedingly crude method, and affords us no information as to the amount of poison which a snake can inject, or as to the exact quantity which can prove lethal to a given animal. Nowadays, all investigators work with dried and carefully weighed quantities of venom. The poison is collected in the following manner, photographs of which I pass round, so that you may the more easily follow my description:—

The snake is first caught, and held firmly behind the neck. This is done by means of a guillotine arrangement, or a strong

pair of long forceps. If these are not available, a trained snakeman will serve the purpose equally well. This man uses nothing but a short, stout stick. First catching the snake by the tail, he pins the head to the ground with this stick. Then, holding the tail between his toes, with the hand thus made free he seizes the animal just behind the head. He then discards his stick. The lower jaw is forcibly opened by catching the skin covering it. The fangs become erected, and the duct continuous. In the case, however, of the daboia, which has exceptionally long fangs, it is well to pass a piece of string behind them, and pull them forward by means of this. The poison may then be extracted by one of two methods. With the finger and thumb of the free hand, firm steady pressure from behind forwards is made over the glands behind the orbits. The liquid poison escaping from the fangs is caught in a watch-glass held by an assistant in a pair of long forceps. The other method is to allow the animal to bite through a piece of rubber, tightly stretched over the mouth of a stout wine-glass. The fangs penetrate through the rubber, the jaws close on the side of the glass, and the poison, escaping from the fangs, collects in the bottom of the glass.

The liquid poison collected in either of these ways is then quickly and thoroughly dried over lime or sulphuric acid. I have carefully estimated the average amount of venom which can be got in this way. I find that a medium-sized cobra—that is, one from 500 to 1,000 grammes in weight—will give about 150 to 200 milligrammes of dried poison; the larger-sized cobras may give as much as 300 milligrammes. Let us say that a cobra gives 200 milligrammes of dried venom. This is sufficient to kill about 5,000 ordinary rats. It is, of course, without actual experiment, impossible to say how much cobra venom it takes to kill a man. Calmette has stated that the lethal dose, weight for weight, increases as the animals increase in size. I am afraid I cannot corroborate this statement; for from many experiments with mice, rats, guinea-pigs, rabbits, monkeys, donkeys, and horses, I have found that the horse is by far the most susceptible of these animals. It is quite unnecessary for me to-night to enter into the detailed figures of these observations.

Fresh liquid poison is of a yellowish or straw colour. Cobra venom is, as a rule, quite clear, while daboia venom has usually a small quantity of undissolved suspended matter. The amount of water contained in these two

venoms, as well as the specific gravity, differs considerably. The figures are as follows:—

	Water.	Specific Gravity.
Cobra venom, . . .	68.5 per cent.	1110
Daboia venom, . . .	75.6 „	1077

The reaction of both these venoms is invariably acid to litmus paper, unless there has been much admixture with the alkaline secretions of the mouth.

Cobra venom has a very bitter taste; chewing daboia poison is like chewing ordinary gum acacia—there is no taste at all.

Venom dried rapidly in a thin layer over calcium chloride cracks into small pieces. In the case of cobra poison, these particles are of an irregular shape, as broad as they are long; they are yellowish and translucent. In the case of daboia venom the cracking is more or less in longitudinal striæ, and, in consequence, fine needle-shaped particles are found. I show you here good specimens of both these venoms. Thoroughly dried venoms retain their toxic power for an indefinite period. They dissolve again readily and completely in water or in salt solution.

It is quite unnecessary for me to-night to enter into the complicated question of the chemical composition of these poisons. At one time, not very long ago, it was thought that the toxic constituents of snake venoms were alkaloids, similar to the poisonous vegetable alkaloids, such as strychnine. This, however, has been shown to be an entirely erroneous supposition. I think I am right in saying that all investigators are agreed that all snake venoms owe their poisonous properties to the proteid or albuminous substances which they contain in solution. All snake venoms are, in fact, almost pure solutions of proteids, and contain little else, except a trace of inorganic salts, a small quantity of an organic acid, and colouring matter. Further, there is no doubt that each venom contains two or more different proteids, and that the physiological action of a particular venom depends on the nature of the proteids which it contains. Organic chemistry has, unfortunately, not advanced far enough as to be able to separate in pure form these various proteids, or to arrive at any estimate of their chemical composition. We have, therefore, to content ourselves at present with various crude methods of studying the physiological actions of the different proteids in snake venoms.

When a solution of snake venom is heated, the poison is affected in two ways:—

1. Some of the proteids present become coagulated.
2. The toxic power of the proteids which are not coagulated is impaired, while their solubilities are not altered.

Whether the toxic power is completely destroyed by heating or not depends on the degree of heat used, the duration of time for which it is applied, and the strength of the solution which is heated. Different poisons are affected in different ways. Thus, while a 0·1 per cent solution of cobra venom can be heated for half an hour at 73° C., with the result of only slightly diminishing its original toxicity, heating a 0·1 per cent solution of daboia venom, at the same temperature for the same length of time, completely destroys its toxic power, so that large quantities can now be introduced into the blood-stream of an animal without causing any symptoms.

You will appreciate from this, then, that we have arrived at the stage when we can say that the poison secreted by a cobra is in all probability of quite a different nature from the venom manufactured by a daboia. In this connection I may say, without entering into tedious details or long explanations, that I feel to-day in a position to state, without fear of contradiction, that cobra venom contains no poisonous element which is contained in daboia venom, and, *vice versa*, that daboia venom is necessarily quite free from any of the toxic constituents of cobra venom. I know that this opinion is in contradiction to the working hypothesis put forward by Martin, of Melbourne, some years ago—an hypothesis which, however, was only provisional, and fitted to the facts then available. I have put forward in detail elsewhere the results of the observations which support this opinion.

We have now to pass on to a brief consideration of the manner in which each of these venoms brings about its fatal result when injected into an animal. Let us begin with cobra venom, the poison which has received more attention from investigators than any other.

If one injects a solution of cobra venom into a hot-blooded animal, no matter what the species of the animal may be, one observes a train of symptoms which, there is no doubt, points to the poison having acted directly on the central nervous system. The animal after a time becomes lethargic and disinclined to move—there is no preliminary stage of excitement; then one observes that the hind legs have become paralysed, the animal drawing them after it when endeavouring to progress. The paralysis of the hind legs gradually becomes more marked, while at the same time it spreads forwards and involves the forelegs. Ultimately the animal becomes completely paralysed,

and lies down unable to move. The breathing still continues. Thus one sees in all such experiments a most striking and typical picture, the animal, be it bird or mammal, mouse or horse, lying on the ground completely unable to stir, the breathing still going on, and the saliva trickling from its mouth.

This, however, does not last long. The paralysis soon involves the respiratory centres, gasping in the search for air becomes marked, and the scene is closed with the total cessation of respiration. Just before this, however, there may be slight general convulsive movements, due to the accumulation of carbonic acid gas in the system. Mark you, there has been no word of failure of the heart, there has been no diminution in the strength of the pulse. After the breathing has completely stopped, if one opens the chest, one sees the heart beating away as if nothing had happened. I have observed this beating go on for twenty minutes to half an hour after the thorax has been laid open, and gradually to become weaker and weaker, and ultimately to cease altogether.

As well as this action on the central nervous system, cobra venom has got an action on the blood, which, however, is of secondary importance to the action on the nervous system. In the first place, it has a marked destructive action on the red corpuscles. *In viro* the effect of this is not very apparent, but *in vitro* a most beautiful demonstration of this hæmolytic effect can be obtained. If, however, a sample of blood be taken after death from an animal which has received a large dose of cobra venom, it is seen that the serum which exudes from the clot is darkly stained with hæmoglobin. In the second place, cobra venom has an action on the coagulability of the blood plasma, which action is also best demonstrated *in vitro*. It has the power of diminishing the coagulability of the blood, and even of entirely preventing clotting taking place. In animals dead of cobra venom intoxication, it is noticed that when a sample of blood is drawn, the clot which forms is not so firm or so compact as in normal blood, and the time which it takes to form may be much lengthened.

As far as my experiments have shown me, I can find no possible relation between the nervous symptoms which I have described, and this action which cobra venom has on the blood. A further proof that the action of this poison on the nervous system is a direct one is afforded by the recent observations which Dr. Hunter has made on the changes in the cells of the central nervous system and in the peripheral

nerve fibres resulting from an injection of cobra venom. I shall leave Dr. Hunter himself to demonstrate these changes. I shall only add that these important and interesting observations appear to me to entirely disprove Cunningham's opinion—viz., that the action of cobra venom on the blood is the primary one, and that the nervous symptoms are dependent on, and result from, the destruction of the blood cells.

If cobra venom be injected directly into the blood stream, the same train of symptoms as I have described above is observed, the only difference being that the symptoms come on more quickly and march to a fatal termination much more rapidly than when the injection is given under the skin.

When a man is bitten by a cobra, the same general symptoms, which I have sketched above as following the artificial injection of the poison into an animal, are observed. As well there is, as a rule, at the beginning, sickness and vomiting, and a feeling of lethargy and disinclination to work; paralysis soon sets in, and life ends, as we have seen, by cessation of respiration. In addition to these general symptoms, however, there are marked signs of poisoning locally at the site of the bite. There is very severe pain, which follows immediately on the infliction of the wound. The parts around become swollen and tender, and a bloody plasma oozes away from the punctures. If the bite has been inflicted on a dependent part, such as a finger, the swelling spreads up the digit, which soon becomes exceedingly tense and extremely painful. Should the patient ultimately recover from the general condition, the tissues for a short distance around the bite die, a black slough forms, and, on separating, leaves a deep hole. This hole heals up very slowly, and there is left an ugly depressed cicatrix. To complete the picture, I may state that in man the general symptoms do not, as a rule, set in for an hour or two after the bite, and that, on the average, death takes place about six hours later. The fatal result, however, may be accelerated, or, on the other hand, it may be delayed for some considerable time, even a day or two, according to the amount of poison injected. You will appreciate, nevertheless, that we have got in all cases a certain interval of time—as a rule, some hours—between the bite and the onset of symptoms and death, an interval of time precious indeed, as you will see, when I come to speak of the treatment of these cases.

Such, then, is a short sketch of cobra venom intoxication. We have now to pass on to the consideration of the effects of an injection of the poison of Russell's viper or daboia. Experiments with this poison, and clinical observations on

actual cases, show quite a different picture to what I have described in the case of cobra venom intoxication. I have had the privilege of studying the action of daboia venom on many varieties of animals—mice, rats, fowls, pigeons, guinea-pigs, rabbits, dogs, monkeys, donkeys, and horses. At the outset, then, it would be well to clear the ground by stating that, as far as my experience goes, it would appear that daboia venom does not produce the symptoms which, as is the case with cobra poison, point to its having a direct action on the central nervous system. I cannot definitely state that it has no degenerative action on the nerve cells and nerve fibres. This point will be shortly settled by our friend, Dr. Hunter, when he has examined the sections, the material for which I have already given to him. At present I can say that I have never seen paralysis of the legs, even in the prolonged cases, follow the injection of this venom. The respiration appears to be interfered with only as a result of the action on the blood and heart. Its action, in short, seems to be confined entirely to the circulatory system, viz., the blood plasma, the blood corpuscles, the capillary walls, and the heart.

In order to make the action of this poison clear to you it will be well to divide all cases of daboia intoxication into two groups, viz., (1) Those cases in which death follows very rapidly—say, within ten or fifteen minutes, or sometimes it is only a few seconds—after the injection ; and (2) those cases in which death is prolonged for some hours or even some days after the injection. Let us take the first group.

When a small quantity of daboia venom is injected directly into the blood-stream of an animal—say, into the marginal vein of the ear of a rabbit—or when a comparatively large quantity is put under the skin, say, of a pigeon, death follows rapidly, sometimes in a few seconds. You will notice that the animal first becomes unsteady on its legs, its powers of equilibration are seriously affected ; then it falls down, and almost immediately violent convulsions set in. Death follows in a few seconds after the onset of these convulsions. From the observation of these symptoms, Cunningham was led to believe that they resulted from the direct action which the poison had on the central nervous system. This, however, I have conclusively shown to be quite an erroneous hypothesis. What, then, has really taken place ? On opening such an animal immediately after death, if the dose has been at all a large one, the whole of the blood is found to be clotted solid—the cavities of the heart, the veins of the lungs and the abdomen, and even the arteries are found full of solid clot.

The heart has, of course, ceased to beat. If the dose has been a smaller one, the clotting may be confined to the pulmonary arteries, the right heart, and the portal vein. The degree and the extent of the clotting depend on the amount of the venom injected, and the rapidity with which it has been injected. But in all cases of rapid death resulting from daboia intoxication, there can be no shadow of doubt but that the fatal result has been caused by this most extraordinary and remarkable intravascular thrombosis.

The symptoms, which Cunningham interpreted as resulting from a direct action of the poison on the central nervous system are due to carbonic acid poisoning, the result of the non-aëration of the blood in the lungs.

In the second group of cases, viz., those in which death is delayed for some time, we have several different phenomena presenting themselves. In the first place, death may follow in a few hours after the injection. In such a case the fatal result is, I am of opinion, due to the depressing action which the poison has on the heart. Thus, I have seen a horse, which had received into a vein a quantity of poison not sufficient to cause a fatal intravascular thrombosis, fall down quite collapsed; its pulse has become feeble, hardly to be felt; its body cold and covered with perspiration—a typical picture of cardiac syncope. There was no paralysis. After a rest the animal got up and walked about, only, however, after the slight exertion, to fall down again in another faint. This condition sometimes ends in death, while, on the other hand, it may be recovered from.

In the second place, should the period of syncope be survived, then a whole series of phenomena develops, which are dependent on the action of the poison on the blood corpuscles, the coagulability of the blood plasma, and the capillary walls.

I have told you that when large doses of this venom are given, either intravenously or subcutaneously, the coagulability of the blood is so increased as to lead to rapid intravascular clotting and death. Should, however, the quantity be not sufficient to cause this thrombosis, and especially will this be the case if the subcutaneous method of injection has been used, then the very opposite condition of blood coagulability is observed. In some cases the blood remains absolutely unclotted when drawn into a test-tube, while in others it clots only after a long interval of time, and the clot is very loose and soft.

As well as this action on the coagulability of the blood, daboia venom has a very marked destructive effect on the red

blood corpuscles. In contrast to what obtains in the case of cobra venom, this destructive action of daboia venom is much more easy to demonstrate *in viro* than *in vitro*. Further, other circumstances, which it is unnecessary for me to detail, go to show that the hæmolytic effects of these two venoms are of a somewhat different nature the one from the other. It is, however, difficult to say in what the essential difference really consists. Finally, daboia venom has a destructive action on the capillary walls, making them more permeable to the blood they contain—a blood more ready, owing to its deficiency in coagulability, to exude.

As a result of these various effects on the blood, heart, and capillary walls, it comes about that hæmorrhages and œdemas are very common in these chronic cases of daboia poisoning. Thus, around the site of the actual punctures or injections in experimental cases there are a large bloody extravasation and much swelling. This swelling spreads rapidly up the limb, and the tissues all around the place of injection die. Thus, there is formed a suitable nidus for all sorts of bacteria. It happens, in consequence, that death in these cases usually results from some bacterial infection, such as tetanus, malignant œdema, or general septicæmia. As well as this local action, hæmorrhage may take place from every orifice of the body—from the nose, from the mouth, from the bowels, or from the kidneys and bladder. The blood is in a fluid condition, and clots badly, while the destruction of the capillary walls allows of it to exude easily. The blood-stained fluid which exudes contains few red corpuscles; the colouring matter of these has been dissolved out, and now stains the plasma.

Such, then, is the picture of a typical case, either actual or experimental, of chronic daboia venom intoxication. It is this state which is usually seen to follow the bite of a daboia in the human subject. This condition can be, and often is, recovered from, the great danger being, as I have indicated, a secondary bacterial infection. Thus, while I have said that a man bitten by a fresh, medium-sized cobra, will, if the snake succeeds in injecting even a modicum of its poison, invariably die if left untreated, it often happens that authentic cases of bites from daboia recover even after serious hæmorrhages have occurred from many places. As I have said, I have never seen paralysis in all my experiments with daboia venom, nor can I find any authentic record of such having occurred in actual cases.

To sum up, then, it would appear that daboia poison acts mainly, if not entirely, on the circulatory apparatus.

1. It affects the coagulability of the blood. Injected directly

into the blood-stream, or in large doses under the skin, it so increases the coagulability as to cause extensive intravascular thrombosis. In small doses it causes, no doubt after a short-lived phase of increased coagulability, a marked and prolonged phase of diminished coagulability, so that in some instances I have noticed the shed blood remain absolutely unclotted even after twenty-four hours.

2. It has a destructive action on the red blood-cells, breaking these up and setting free the hæmoglobin contained in them.

3. It has a destructive action on the capillary walls, rendering them more permeable to their fluid contents.

4. It has a marked depressing action on the heart, so marked, indeed, as to sometimes lead to a fatal termination from this action alone.

Such, then, as far as I know, is the physiological action of the venom of the *daboia Russellii*.

As regards the poisons of the various members of the *bungarus* or *krait* family of snakes I have had little experience. I have, however, made some preliminary observations with the venom of one of this family, viz., the banded *krait* or *bungarus fasciatus*. And as Dr. Hunter is going to say something about the degenerative action of this poison on the nerve cells and nerve fibres, I think it would be advantageous if I were to introduce his remarks by a short description of the observations I have made. Let it be clearly understood, however, that my observations are by no means complete, and, further, that they only apply to the poison of *bungarus fasciatus*, and not to that of any other member of this family.

In the first place, then, if a sufficient quantity of this venom be injected into the blood-stream of an animal, there is brought about a rapid and extensive intravascular thrombosis, similar to what is observed in the case of *daboia* venom. Death takes place rapidly, and is preceded by the same symptoms as I have already described. I have not up to the present made any observations as regards the condition of the blood coagulability in the more chronic cases of intoxication with this venom. Further, I have not been able to demonstrate any hæmolytic action of this venom either *in viro* or *in vitro*.

In the second place, if the poison be injected subcutaneously, death may take place in an hour or two, or may be delayed for several days, according to the amount injected. I have seen an animal live as long as seven days. In the more rapid cases one sees paralytic symptoms, which are clinically indistinguishable from the symptoms which I have already described, result from an injection of cobra venom. In the chronic cases,

however, a very different picture is presented. For two or three days, perhaps, the animal appears to be perfectly well. It eats well, and retains its weight. Then one notices that it refuses to eat, and soon a marked emaciation, affecting the whole body generally, is observed. The loss in weight is rapid and marked. At the same time, paralysis, beginning in the legs, becomes apparent. This paralysis soon extends, and ultimately involves the whole body. A purulent discharge from one or both eyes is a marked feature of the later stage. Ultimately the animal, after lying two or three days completely paralysed, dies from involvement of the respiratory centres.

This short description of the clinical symptoms resulting from an injection of the venom of the banded krait is, I think, sufficient to convince you that there is a marked difference between the action of this venom and the action of cobra venom. The histological appearances which Dr. Hunter will demonstrate to us may, perhaps, substantiate this statement.

In conclusion, I have a few words to say as regards the treatment of snake-bite. When we consider the terribly dramatic, even tragic, circumstances attending these cases, it is not to be wondered at that the treatment of cases of snake-bite has been surrounded by all kinds of quackery and roguery, especially in a country like India, where the people's emotional reflexes are easily stimulated to belief. What resident in India has not heard of the method still in vogue of applying the cloacæ of fowls to the bite? One after the other the fowls mysteriously die, almost as soon as the application is made, until there is arrived a time when the poison has all been "sucked out," and the fowls no longer die. Who has not heard of the magic stone, of the virtue of *ném* leaves, both when locally applied and when internally administered, of spells and incantations? What remedy has not been tried and vaunted as a specific for these cases? Strychnine, alcohol pushed to cause helpless drunkenness, &c., have at various periods been praised and put forward as absolutely infallible. All these methods and drugs, and many others besides, have had, however, to give way before the test of scientific research. While, however, scientists have so ruthlessly demolished all these so-called specifics, they have given us a remedy certain and trustworthy for at least cases of cobra-bite. I speak, gentlemen, of the anti-venomous serum prepared by Dr. Calmette, of Lille, which can be prepared and easily used by anyone. I have carefully guarded myself by saying that this serum is useful at least for cases of cobra-bite, for while Martin, of Melbourne, has shown that it has

little or no power to neutralise the poisons of the poisonous Australian snakes—viz., *pseudechis* and the dreaded *hoplocephalus*—I have demonstrated, in many experiments with different animals, that it is of no avail whatever in counter-acting the poisonous effects of *daboia* venom. I have also recently made some series of experiments with Calmette's serum and the venom of *bungarus fasciatus*. These experiments, which are in process of publication, definitely show that this serum has no neutralising power for this venom.

It is not my intention to-night to enter into any polemical explanation as to the reasons why Calmette's serum is efficacious for cobra venom and not for the other two venoms I have mentioned, nor for the poisons of the two Australian species. I am quite aware that Calmette claims that his preparation is equally effective against every kind of snake venom. But Martin, Cunningham, Stephens, Hanna, and myself have shown beyond a doubt that this statement is an untrue one, and must be considerably modified.

But it is a great step in advance that we have at hand an antidote to the venom of the cobra. If such is possible to obtain, then we have hopes, amounting almost to certainty, that antitoxic sera will ultimately be obtained for the poisons of the other Indian snakes.

It would be a waste of time for me to go into the details of the method which Calmette uses to prepare his anti-venomous serum. Suffice it to say that the serum is obtained by immunising horses with a mixture of snake venoms, of which mixture cobra poison is the principal constituent. Calmette takes from eighteen months to two years to immunise his horses. The process is a tedious one, and much delay and trouble are caused by the formation of abscesses at the site of injection.

As regards, then, the method of administration of this antidote, it is well to make the injections directly into the blood-stream. Our aim is to get the serum as quickly as possible into contact with the venom, and this object is best achieved, as you can well understand, by intravenous injection. By this method less serum is required, and the results would undoubtedly be more satisfactory. But, unfortunately, in cases of cobra-bite trained medical assistance is not always at hand, and such cases admit of no delay in their treatment. We have then to fall back on injecting the serum subcutaneously, and allowing it to be absorbed into the blood from there, a process which Martin has shown occupies a considerable time. The best site for injection is, I think, the loose

tissues of the flank. A large quantity of serum can be injected there, if the needle is plunged deeply enough, without giving the patient the slightest inconvenience.

As to the dose to be injected, Calmette contends, on very slender, in fact, on empirical grounds, that from 10 to 20 c.c. of serum are sufficient for any case of cobra-bite. In my opinion—and I speak from a large experimental experience with this poison, as well as from some interesting observations which I was privileged to make a year or two ago on an actual case of cobra-bite at the laboratory in Bombay—this dose would in many cases fail to save the life of the patient. A short account of this case might perhaps interest you. An officer of the laboratory, while assisting in extracting the poison from a full-sized cobra, put his fingers where he had no business to—that is, in the neighbourhood of the snake's mouth. In a moment the animal had buried one of its fangs in the point of the right thumb. The thumb was at once withdrawn, but not before the total amount of poison in the gland had been injected. The symptoms, both subjective and objective, which followed, were carefully noted as they occurred.

Locally, there was much pain at the site of the injection. Swelling of the parts soon began, and gradually became well marked. A bloody serum oozed out from the puncture, and continued to do so for about twenty-four hours. Fortunately for the experiment, no fresh serum was available, and we had to inject two bottles (20 c.c.) of a serum which was at least four years old. Just the week previous to the accident, I had tested this serum with cobra venom on rats, and had found it had little or no neutralising power. The patient then went on with his work. About three hours after the bite he began to get lethargic and lazy—did not wish to work and preferred to lie down. This was soon followed by sickness and vomiting. Then it was noticed that his legs were weak; he was unable to move about, and had perforce to adopt the prone position. It appeared, then, that the serum had had little or no effect, and that the case was hopeless. Just at this time, however, some fresh serum arrived. Ten c.c. were at once injected, and the symptoms watched. In about half an hour the paresis of the legs showed signs of improvement. A short time later our patient was able to walk away. Locally, the pain and swelling continued for some time. A small slough formed; this, on separating, left a deep hole, which gradually healed up. A depressed scar is now the only sign of the accident remaining.

It is, of course, apparent to you that the dose of antitoxin necessary in the case of any cobra-bite must depend on two unknown quantities, viz., (1) on the amount of venom injected by the snake, and (2) on the smallest quantity of venom which can kill a man. It is also apparent that we must, however, always calculate on the assumptions that the snake has been a full-sized one, and that it has injected the maximum quantity which can be squeezed out from the gland, and, further, that man is as susceptible, weight for weight, as the most susceptible animal with which we are acquainted. Granted these assumptions, there is no doubt that at least 40 c.c. would be necessary in some cases of cobra-bite, in order even to save the life of the patient. It is, of course, evident that in many cases, such as when the snake has been a small one, when it has already exhausted its poison, when it has not got properly home with its bite, &c., a much smaller quantity would suffice. I should, however, recommend that this quantity of serum be injected right off in all cases of cobra-bite, and the result be watched. If no symptoms appear, nothing further need be done. Should symptoms come on after this injection, another injection of the same amount should be given.

The above dose applies only to those cases in which marked nervous symptoms have not developed before the patient comes under treatment. Should symptoms have set in, then intravenous injection of a large quantity of serum should be made. The symptoms show us that the venom has already joined on to the nerve centres, and to affect it now, "mass" action must be resorted to. The toxin must be separated from its connection with the nerve centres by means of an overwhelming amount of antitoxin.

Now, a word, in conclusion, as regards the local treatment of these cases. Nothing should be done, with the exception, perhaps, of applying a tight ligature above the bite. This delays the absorption of the poison and gives the serum time to be absorbed into the blood and to neutralise the poison circulating there. Cutting open the wound, sucking, cauterising with the actual cautery or with strong acids, and such like heroic measures, are of little avail. They may destroy a small quantity of the poison with which they come in contact, but in animal experiments it has been definitely shown that they do not—or only slightly—delay the march of the symptoms. In the cases where recovery has resulted after the use of these measures alone, the explanation undoubtedly is either that a fatal dose has not been injected, or that the snake has been a

non-poisonous one, or perhaps a lizard. The injection of chloride of lime, permanganate of potash, or chloride of gold at the site of the bite has been, I know, recommended by Calmette. Martin, however, has shown that this also has no effect in delaying the symptoms, if a ligature has not also been applied. When a ligature has been applied along with such an injection, it is the ligature, and not the injection, which has been beneficial.

As regards the treatment of daboia venom intoxication, I know of no specific. These cases have to be treated on general principles—stimulants of a diffusible nature to tide over the stage of cardiac depression might be given. Beyond this I can suggest nothing which would be at all likely to influence these cases for the better. I have already mentioned that Calmette's serum has no power to neutralise the venom of *bungarus fasciatus*. Cases, therefore, of bites from kraits must also be treated on general principles.

I should have liked to tell you more of this most interesting subject, especially should I have desired to say something of the "precipitin" story, but I find I have detained you long enough, and I have now only to thank you for giving me such patient attention.

THE HISTOLOGICAL APPEARANCES OF THE NERVOUS SYSTEM IN KRAIT AND COBRA POISONING.¹

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(From Dr. Lindsay Steven's Wards in the Royal Infirmary.)

My first duty is to try to express the debt I owe to Captain Lamb for so freely placing at my disposal the nervous tissues from the animals killed in the course of his investigations on snake poisons. The changes found in these, so far as I have examined them, are of the very greatest interest, not only from the point of view of determining the toxic action of the snake venoms, but even more so as a study of acute degenerative changes in the nervous system. I count it no small

¹ A communication made at a meeting of the Glasgow Medico-Chirurgical Society held on 7th November, 1902.

honour to be associated with Captain Lamb in this important work of his.

I have just said that the study of these tissues opens up a very wide subject, namely, the acute degenerative changes in the nervous system as the result of toxic poisoning. This aspect of the question, however, I am in no way prepared to deal with at present; and so, all that I propose to do to-night is to illustrate to you, by means of the sections under the microscopes, the action of the krait and cobra venoms on the nervous system, which Captain Lamb has already so well described to you. But, in the first place, I must tell you that the sections have been stained by two different methods, some by the Marchi method, which shows early degeneration in medullated fibres, and the others by Nissl's method, to show degeneration in the nerve cells. The staining element in the Marchi stain is osmic acid. This, normally, does not blacken myelin (phosphoretted fat), but blackens ordinary fat, into which myelin on degenerating becomes converted. In the peripheral nerves, under the microscope this blackening of the coagulated myelin is well shown, and further evidence of nerve degeneration is seen in other sections in the great increase in the number of the internodal nuclei.

As to the nerve cells, they have been stained by Nissl's method, which brings out the chromatic elements, or, as they are called, the Nissl bodies of the cell plasma. The ganglion cell, I should perhaps say, has a round nucleus with central nucleolus, and a frame-work made up of delicate fibrils which unite to form a network. This fibrillar part (the spongioplasm) is embedded in a non-organised and probably fluid substance, the trophoplasm. These two together constitute the achromatic part of cell. The Nissl bodies are of the nature of nucleo-albumins, and are probably incrustations on the achromatic reticulum. They are composed of fine granules united together into the oval, wedge-shaped, or spindle-shaped "bodies" which group themselves concentrically round the nucleus, and otherwise generally fill up the whole of the cell plasma. Now, when a ganglion cell undergoes degeneration, these Nissl bodies become disintegrated and broken up—fragmented, as it is usually called. As a result, the appearance of the cell is considerably altered, for, in place of the clearly-defined Nissl bodies, we have a dust-like granulation lying in a rather diffusely stained cell plasma. This fragmentation may be partial or complete, peripheral, perinuclear, or diffuse. In the more chronic forms, one may determine the process by studying a number of cells, many of which may be in different

stages of degeneration. Sometimes the fragmentation is seen to begin round the nucleus, and to spread outwards, involving successively adjacent Nissl bodies. Sometimes, on the other hand, the process begins at the periphery of the cell and passes inwards. In the more acute forms, with which we must class these venom intoxications, the process seems to be diffuse, that is, to affect all the granules at the same time. Indeed, the cells in the sections under the microscopes look as if a solvent had been brought in contact with them, and their Nissl bodies almost completely dissolved out.

Now, a cell in this stage of degeneration may recover, but if the process progresses so that the nucleus and the stroma of the cell become involved, regeneration would seem to be impossible.

The Nissl bodies, I should tell you, seem to represent a functional potentiality of the nerve cell, either in the form of nutrition or energy, or both combined. The activity of the cell, however, may continue, even when the Nissl bodies have largely disappeared, so long as the achromatic parts are still intact; but it seems clear that the intensity of the action depends to a large extent on the amount of chromatolytic substance present. There is, therefore, no doubt that the chromatic part of the cell plays a very important rôle in its functional activity, and that any change it may undergo is a direct indication of at least a nutritive alteration in the cell itself.

Now, to return to the action of these snake venoms. I have, so far, examined the nerve tissues from two monkeys killed with krait, and from one monkey and three rats killed with cobra poison. And, speaking generally, one may say that the changes in all three are very much alike, for all show an acute degenerative change both in ganglion cells and nerve fibres. If one were seeking for an analogy, one might liken the appearances to those found in the most acute cases of acute insanity, for, as you will see, the changes in the two conditions are very much the same.

Krait Monkey I (June, 1902) died on the fifth day after injection of krait venom. The tissues examined were motor cortex, medulla, and spinal cord. They were fixed in perchloride of mercury, cut in paraffin, and stained according to Nissl's method by theonin, and some by toluidin blue. Sections were cut from four different levels of the medulla, from three levels of the cervical cord, from three of the dorsal cord, and from two levels of the lumbo-sacral cord. In all of

these sections there is evidence of the existence of a diffuse chromatolysis (primary degeneration) affecting a very considerable proportion of the ganglion cells. This change is most marked in the cortex, where one has difficulty in finding a single normal cell. The vast majority of the cells here have a rather deeply stained plasma, and in this are scattered dust-like granules, the remnants of the Nissl bodies. Many cells, too, show vacuolation of their plasma. A few cells have their Nissl bodies not entirely fragmented, but these are few in number, and it is doubtful if one perfectly normal cell is to be found.

In the medulla the changes are not nearly so well marked as in the cortex, but, nevertheless, throughout the whole of the sections a very considerable proportion of degenerate cells can be seen. These are most numerous in the eighth nucleus, less so in the twelfth, and less still in the tenth (motor). In the twelfth nucleus nearly all the cells show a certain breaking up of the Nissl granules, but only in a small number of cells is there the typical dust-like fragmentation affecting the whole of the cell as seen in the cells of the cortex.

The degenerative process is more marked in the cord than in the medulla, but less than in the cortex. It is about equally marked in the cervical, dorsal, and lumbar regions, though certain sections show a greater change than others quite close to them. In many of the sections in the cervical and lumbar enlargements not more than three or four normal cells are to be seen. Many cells have an almost clear plasma, with a few dust-like granules scattered in it, but most of the cells have a darker plasma, with more of these dust-like granules. The process seems to affect the whole of the cell uniformly, though in a few cells the fragmentation seems more marked at the periphery than round the nucleus. The nucleus in most of the cells is not involved, and remains central.

Considering the appearances generally, it may be said that the cells do not present such a typical picture of degeneration as, for instance, the cells in a case of alcoholic neuritis. In alcoholic neuritis the dust-like fragments are better defined, and more closely and orderly packed in the cell plasma. In this case of krait poisoning the fragmented granules are more scattered, and, as has been noted in the cortical cells, there is the vacuolation of the plasma. The process seems as if it were more acute than in alcoholic neuritis, more as if the Nissl bodies were being dissolved out rather than systematically fragmented.

Krait Monkey II (August, 1902) died on the tenth day after the injection of krait venom. The parts examined were the cortex, pons, medulla, cord, and the vagus, median, and posterior tibial nerves. Sections from these were stained both by the Marchi and Nissl methods. All of these preparations show, at least, some degeneration of cells or nerve fibres, and in some of the sections the degeneration is extremely well marked. Generally, it is more marked in the ganglion cells than in the fibres, and more marked in the cells of the cord and cortex than in those of the nuclei in the medulla and pons. In the cervical cord not a single normal cell is to be found. Many cells are simply outlines, without any granulation whatever (ghost-cells). Some cells stain deeper and more diffusely than normal, and have their Nissl granules much fragmented. A good many cells are definitely vacuolated. There seems, too, a considerable diminution in the number of cells in the anterior horns. It is difficult to estimate this accurately, but, judging by comparison with *Monkey I*, the loss seems considerable—about two-thirds of the normal. In the cervical region some of the sections include the posterior root ganglion. But the change in the cells of these ganglia is very much less marked than in the ganglion cells of the anterior horns. Indeed, many of the posterior root ganglion cells seem quite normal, and few show any marked degeneration. The contrast between the condition of the anterior horn cells and the posterior root ganglion cells is a point to which one would draw special attention.

The appearances at the dorsal, lumbar, and sacral levels are much the same as found in the cervical cord.

Of the ganglion cells in the medulla and pons, a considerable proportion show well-marked chromatolysis, but the changes are by no means so extreme as those just described in the cord. This doubtless explains why movements of the heart and of respiration continued some days after paralysis of the other muscles of the body.

In the cortex the degenerative changes are about as marked as in the cord, there being many ghost-cells and many deeper stained cells with fragmented granules, or with no granules at all. A considerable proportion of the cells are vacuolated. It is difficult to give a reliable opinion as to whether or not there is any considerable loss in the number of cells in the cortex.

With the Marchi stain there is seen to be a fairly well-marked degeneration of fibres, both in the brain and spinal cord. But the proportion of fibres affected seems much less

than that of ganglion cells. It is to be noted, too, that the degenerated fibres are scattered throughout the whole section, *e.g.*, in the cord, and that one tract seems no more affected than another. The degeneration of fibres, then, would seem to be primary and not secondary to degeneration of their corresponding cells. This seems certainly so when we consider that with but slight changes in the posterior root cells the number of degenerate fibres in the posterior columns is, if anything, rather greater than in the descending tracts of the cord, whose fibres have origin from cells showing such a marked chromatolysis.

The peripheral nerves show changes somewhat analogous to the changes in the white matter of the cord. That is to say, the number of degenerate fibres is considerable, but not so great as that of normal fibres. The median and posterior tibial nerves are about equally affected, but the vagus shows much fewer normal fibres than either.

The anterior and posterior roots seem less affected than the peripheral nerves, and the posterior root fibres external to the cord seem less involved than after they had entered the cord.

Cobra Monkey I (October, 1902) died in six hours after injection of 0.25 mg. (per kilo) of cobra venom. The parts examined were cerebral cortex, cerebellar cortex, pons, medulla, cord, and vagus, median and posterior tibial nerves. The sections were stained by Marchi's method, Nissl's method (theonin), and with hæmatoxylin and eosin.

The degenerative changes in this monkey are somewhat similar to those in Krait Monkey II. Throughout the cord the appearances are somewhat striking. In the cervical enlargement, at the periphery of each anterior horn, *i.e.*, in the antero- and postero-lateral groups, some ten to fifteen cells are to be seen with well-stained and fairly well-defined Nissl granules. These granules, however, are not quite normal, for though not definitely fragmented, they look as if little pieces had been chipped off their edges; and under a high power it is quite apparent that their outlines are blurred and ill-defined, as if some solvent had been acting on them. The rest of the cells of the anterior horn are degenerated, and without any granules whatever. They are not typical "ghost-cells," their nucleus and reticulum being too deeply stained for that; they look, rather, like a normal cell minus its chromatic granules. No cell is to be seen with the dust-like granulation so characteristic of a more chronic chromatolysis. In the lumbo-sacral region the same

appearances are met with as in the cervical enlargement, though the number of these almost normal cells is less; and a fair proportion of "ghost-cells" is present, along with the deeper stained cells with no granules. Particularly in the lumbo-sacral and dorsal regions a certain number of cells have a pale, diffusely stained, blue nucleus. I am disposed to consider this a "homogenous degeneration" of the nucleus, as in other sections, stained with hæmatoxylin, the nucleus of some cells has something of the same character. This may, however, be only an error in the staining. In almost all the cells the nucleus is central and the nucleolus distinct.

In the pons and medulla the changes are much the same as in the cord, though not so marked. The twelfth, tenth (motor), and seventh nuclei all contain some of the almost normal cells, but also a considerable proportion of cells with the Nissl bodies much broken up. The cells of the seventh nucleus are less affected than those of the other two nuclei. In these sections, also, cells are to be found with diffusely stained nucleus, just as described in certain cells of the cord.

In the cortex the vast majority of the pyramidal cells show an acute chromatolysis. As in the cord, there are some cells well-stained and with their grounds but little altered; but these are few and far between, not more than three to four to each section.

In the cerebellum not one normal Purkinje cell is to be seen, most being deeply and diffusely stained, with a few dust-like granules in their plasma.

Throughout the cord, pons, medulla, and cortex there seems to be a slight increase of the connective tissue cells. These seem to be attracted by the ganglion cells, for one frequently sees such a cell with three to four connective tissue cells around it and in close apposition to it. There is considerable dilatation of vessels throughout the central nervous system, and in the cord some small hæmorrhages into the grey matter.

With the Marchi stain there is undoubted evidence of degeneration in the nerve fibres of the cord. This is not quite so marked as in Krait Monkey II, but it is quite certainly demonstrated both in longitudinal and transverse section. The cortex shows no blackened fibres, and the cerebellum but a very slight reaction. The peripheral nerves, on the other hand, shows well-marked degenerations—much more so than in Krait Monkey II, and it is about equally marked in the median, vagus, and posterior tibial nerves. There is also increase of the internodal nuclei in these nerves.

In this monkey, then, we have a poison which produces, in the short time of six hours, a degeneration of nearly every nerve cell in the central nervous system. Some cells are without doubt less affected than others, they having evidently a greater power of resistance to, or less affinity for, the poison. These cells, as we have seen, are among the large ganglion cells of the cortex, the motor nuclei in the bulb, and the lateral groups in the anterior horns of the cord. This poison also affects nerve fibres, though in much smaller numbers than it does nerve cells. The fibres of the peripheral nerves, too, are much more affected than those of the upper motor neurones.

Cobra Rat I died in twenty-five hours after an injection of 0.05 mg. of cobra venom; *Cobra Rat II* in three hours after injection of 0.25 mg.; and *Cobra Rat III* in forty-five hours after injection of 0.25 mg. *plus* antivenom serum. The tissues from these were fixed in formol, and examined by Nissl's method only. In the whole three cases, there is a very marked acute degeneration in the ganglion cells of cortex, pons, medulla and cord. It is most severe in Rat III, that is, there is more definite breaking up of the frame-work of the cell than in the other two cases. The degeneration in Rats I and II is pretty much the same, though possibly more acute in the latter.

In *Rat I*, in the cord, not a normal ganglion cell is to be found. Most of the cells are faintly stained, with no granules, and with a diffusely stained light blue nucleus; some cells have no nucleus at all. Some few cells, again, are rather deeper stained, and contain broken up granules, but they also have a pale blue nucleus. There is no vacuolation of the cell plasma. The appearances in cortex and medulla are much the same as in the cord.

In *Rat II* the process seems more acute, and, in a way, more severe. In place of the pale cells of Rat I, the cells are much deeper stained, some containing broken-up granules. Vacuolation of the cell plasma is very marked. There are some few pale cells, but they are also vacuolated. In places, the cells are very much broken up, and evidently beyond hope of regeneration. In most of the cells, the nucleus is central, but it is ill-defined and diffusely stained. In the lower part of the cord, there are some cells more nearly normal, but they are few in number.

With *Rat III* most of the cells are deeply stained, but they are very much broken up and vacuolated. Some have pieces punched out of their edges, giving them an irregular and

ragged outline; almost none has any granules whatever. There seems no doubt but that in the majority of the cells the achromatic part is involved, and that they are quite beyond recovery.

In the whole three cases, there is some increase of the connective tissue corpuscles, particularly surrounding the ganglion cells.

AMBLYOPIA FROM NON-USE.¹

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THE condition to which the name, which is chosen as the title of this paper, is applied, is also spoken of as the amblyopia of squint, congenital amblyopia, and other similar designations in various languages. The fact that so many titles have been bestowed upon the condition will indicate that several theories are held regarding its origin by opposing groups of ophthalmic surgeons in this and other countries. The definition which is given under the heading of congenital amblyopia in Schwartz's *Encyclopædia of Eye Diseases*² is as follows:—"This condition is assumed to exist when non-progressive dimness of vision, which has existed since infancy, is discovered in an eye in which ophthalmoscopic and perimetric investigations reveal no change."

History.—The condition was, apparently, first noticed in association with squinting early in the nineteenth century, but the facts of the case were, of course, not fully known until the use of the ophthalmoscope enabled the surgeon to recognise the absence of fundus change.

The first theory brought forward to explain the nature of the condition was, that on account of the fact that the eye squinted the image on its retina was suppressed by a mental process to avoid diplopia.

This theory had many able supporters, amongst whom were Donders,³ V. Graefe, and Javal, and it was asserted as evidence

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 17th October, 1902.

² Straub, *Encyclopædie der Augenheilkunde*, 1902, Schwartz, Leipzig, p. 33.

³ Donders, *Anomalies of the Accommodation and Refraction*, 1864, New Sydenham Society, London, p. 563.

in favour of it that, after correction of the squint by tenotomy of the shorter muscle, the vision of the eye was immediately—and often considerably—improved.

In consequence of the acceptance of this view of the matter, the terms *amblyopia strabotica*, *amblyopia ex anopsia*, *amblyopia durch nichtgebrauch*, &c., were introduced by its supporters. Subsequent investigations,¹ however, revealed the fact that in some cases the amblyopia preceded the squint, and as some observers² considered that in many of the cases which were described, minute changes could be detected in the retina, due possibly to congenital malformations, it was decided that the condition was really congenital. Thus the terms *amblyopia congenitalis*, *angeborene Amblyopie*, &c., were introduced. More recently the investigations of Naumoff,³ Königstein,⁴ and Hippel⁵ have shown that various changes, such as hæmorrhages into the retina and under the choroid, and injuries to the optic nerve, are frequently found in the eyes of newly-born children, as a result, probably, of pressure during labour, and this fact has been adduced in opposition to the theory of the origin from squinting.

Recently, also, Alfred Graefe⁶ has stated it as his opinion that the apparent improvement in the vision after tenotomy may be accounted for by the fact that the vision of a squinting eye is usually taken whilst the eye is in an uncomfortable position, looking straight forward. He thinks that the vision of squinting eyes should be taken whilst the eye is in a position of rest—i.e., deviation—and that under this condition it will usually be found to be much better than otherwise. Lastly, cases have been recorded in which it has been conclusively shown that, when one eye is amblyopic, if the useful eye be lost or damaged the vision of the hitherto defective eye frequently improved to a great extent after forced use. This last fact is, of course, strongly opposed to the theory that the defective vision is due to an anatomical change.

Description of the condition.—In cases of squint, apart from paralysis of ocular muscles, it is frequently found that

¹ Schweigger, *Handbuch der Spec. Augenheilkunde*, 1875, Berlin, p. 158.

² Nuel, *Traité Complet d'Ophthalmologie*, Wecker and Landolt, 1887, vol. iii, p. 759.

³ Naumoff, "Ueber einige pathol. anat. Veränderungen im Augenhintergrunde bei neugeborenen Kindern," *Arch. f. Ophth.*, xxxvi, 3.

⁴ Königstein, "Untersuchungen an den Augen neugeborener Kinder," *Wien. Med. Jahresberichte*, 1881.

⁵ Hippel, "The Eyes of New-born Infants," *Arch. of Ophth.*, xxvii, p. 339.

⁶ Graefe (Alf.), *Das Sehen der Schielenden*, 1897, Wiesbaden, p. 36.

the vision of the squinting eye is much more defective than the amount of error of refraction and the appearances of the fundus oculi would lead one to expect.

This occurs, probably, in 50 per cent of cases of convergent, and perhaps 20 per cent of cases of divergent, strabismus. In some cases the vision is as low as $\frac{1}{200}$ to $\frac{1}{400}$ of the normal, but occasionally it is $\frac{1}{30}$ to $\frac{1}{10}$ of the normal. Correction of the refractive error in such cases produces no appreciable benefit to the visual power, and no change in illumination makes any difference.

It is not of necessity the more ametropic eye which becomes amblyopic, although it is usually so, and the amount of refractive error is sometimes disappointingly low.

A case of this nature was seen some time ago, in which there were two dioptries of hyperopia in the right, and three dioptries in the left eye, and in which the right eye was amblyopic. No case has been recorded, so far as is known, in which amblyopia of the nature under consideration was found, and in which there was no error of refraction.

Amblyopia usually occurs in an eye which squints, but the squint is not essential, as the following case shows:—

A lady was recently sent to have her eyes examined, as she complained that after any near work—such as reading or writing—her left eye became sore. She was in good general health, and had never had any affection of the eyes. There was no squint or tendency to squinting. The vision of the left eye was almost normal in amount, but when the right eye was tested it was found that there was only $\frac{1}{20}$ the usual amount, which fact came as a very considerable shock to the patient. The refractive condition of the eyes was estimated, and it was found that there was a low degree of hyperopia with astigmatism in each. There was absolutely no change in the fundus of the right eye, even the optic nerve looking quite healthy—better, in fact, than that of the left, which was congested.

The conclusion was come to that this was a case of amblyopia from non-use, and that treatment by education would probably greatly improve vision. This proved to be the case, for after two months of treatment it was found that the vision, without the aid of glasses, was $\frac{1}{2}$ the normal, improved a little only by the aid of a low cylindrical lens. Unfortunately the lady had to go into the country to nurse a sick relative, and treatment was discontinued, or very probably the improvement would have been much more marked even than it was.

This case is not the only one of its kind on record, for Schweigger¹ mentions the occurrence of amblyopia of this nature without squinting.

When the amblyopic eye is examined with regard to the state of the field of vision, it is found that the peripheral limits are almost invariably normal, both for a white light and for colours. There is in many cases, however, a central scotoma, often of very small size, and very difficult to discover, unless special precautions are taken. This central defect is sometimes very well marked, but it is more often merely like a little cloud. It is most easily discovered and mapped out by getting the patient to look at a sheet of white paper with a cross on it. As the visual power of the retina diminishes gradually, not abruptly, on leaving the macula, it is of extreme importance that the image of the cross should be made to fall exactly on the macula region, since as much as $\frac{1}{10}$ of the normal can be seen by parts on the retina closely adjoining the macula, although much less than this (probably not $\frac{1}{20}$ or $\frac{1}{30}$) is seen if a slightly more peripheral portion of retina be used. It is highly probable that this fact accounted for the apparently variable vision of squinting eyes, as it is often very difficult to get patients to understand what is required of them under these circumstances.

Before leaving this part of the subject, it should be mentioned that in many cases of considerable refractive error even the best possible correction fails to raise the vision to the normal standard. Some writers² on amblyopia from non-use have included such cases under this heading, but as there is frequently chronic congestion of the optic nerves, with lines of exudation along the retinal vessels in such cases, it seems incorrect to do so. The use of correcting lenses will in many of these cases fail to improve vision, even after several years, unless rest is given to the eyes, which seems to indicate that the defect is rather due to over- than non-use of the eyes.

True amblyopia from non-use is never found to affect both eyes, but the condition above referred to is generally bilateral.

Etiology.—Regarding the cause of amblyopia from non-use, there is little of a definite nature to be said; all that can be done is to bring all possible new light to bear upon the subject.

¹ Schweigger, *Klinische Untersuchungen über das Schielen*, 1882, Berlin.

² Nuel, *Traité Complet d'Ophthalmologie*, Wecker and Landolt, 1887, vol. iii, p. 759.

It has been seen that the amblyopia often precedes the occurrence of squinting, and that it may exist without squinting through many years, so that it follows that it is not due to this. Again, if the amblyopia was due to a congenital defect of the optic nerve or retina, it is highly probable that some visible change would be present in the fundus oculi, and that no improvement in vision could take place under any circumstances. The same may be said regarding an amblyopia in consequence of retinal or other changes due to injury occurring during the act of birth.

It has been mentioned, however, that after the loss of the hitherto useful eye, the vision of the formerly defective eye is often markedly improved; and it can be proved that, apart from such a loss, the vision can be greatly improved by education. It may be mentioned here that atrophy of the optic nerve does not ensue in such cases, since the peripheral parts of the retina are functionally active, probably. Von Graefe¹ recorded a case in which there was absolutely no evidence of atrophy of the nerves in a man who had been blind of cataract for sixty years, and in which the vision was reduced to perception of light only. Thus it seems probable that a very small degree of stimulation is sufficient to keep up the functional activity.²

The only view of the matter which can account in a satisfactory manner for the various facts of the case is that which assumes that the defect is due to suppression of the image from the eye.³ The suppression is evidently purely a mental process, and probably is quite independent of the will power.

It is admitted by those who have studied the subject that the very young infant has only very defective vision. Some, indeed, say that at birth an infant has only qualitative perception of light. Binocular vision, also, is not established until comparatively late, say the second year, on an average. Further, binocular vision is not a congenital attribute, although the tendency to it probably is, but is the result of education, combined, probably, as Von Graefe thought, with the fact that there are certain anatomical peculiarities in the human subject and some other higher mammals.

¹ Graefe (Von), "Extraction eines 60 Jahre reifen Katarackts," &c., *Arch. f. Ophth.*, t. 1, f. 2, p. 326.

² Dr. A. A. Gray has informed me that he has noted a similar fact in regard to aural cases.—L. B.

³ Soleberg Wells, *Treatise on Diseases of the Eye*, London 1870, second edition, p. 439.

If, then, some circumstance interferes with the facility of acquisition of the power of binocular vision—if the education is rendered peculiarly difficult by the existence of a refractive error—the effort to cultivate this power may be given up at a very early date. The result of this may be either that the individual may have normal visual power (after correction by suitable glasses) with each eye, but no binocular vision, as in cases of anisometropia, or that the image from one eye is neglected, no note of it being taken by the higher visual centres.

This supposition that the image from one eye is not recorded by the mind is not a purely uncorroborated conjecture. It is supported by the fact that it is possible for an adult who has perfect binocular vision to neglect the image from one eye by adopting a simple expedient.

If a simple convex lens of three inches focal length be held before the right eye, and if some small object be regarded very carefully through it with this eye, it will be discovered that, although widely open, the left eye sees almost nothing. The accommodation of both eyes should be completely (or almost so) relaxed, and the visual axes should be parallel, whilst the object regarded by the right eye should be small, so that it does not intervene between the left eye and a distant object. In this way, even the image of a 16 candle-power electric lamp, at 20 feet distance, can be completely lost to view. It is evident, then, that the mind is concentrated upon the image from the right eye, and that the left eye is neglected, so that the image on its retina is not noticed by the brain.

Similarly, if one looks through a telescope at a distant object, using the right eye, the left eye, unless attention be specially given to it by closing for a moment the right, is not being utilised at all. Careful education, however, can enable an observer to see an enlarged image of a distant object with the right eye through a telescope, and also to see a small image of the same object at the same moment so clearly that the relative sizes of the images may be accurately estimated.

It is of further interest to notice that the unoccupied eye, although seeing almost nothing with the central area, is often attracted by a comparatively small object which moves in the periphery of its visual field, but which if stationary would be invisible. This indicates, then, that whilst central vision is temporarily suppressed, peripheral vision is active. It may be fairly considered that the special rôle of peripheral vision is to

detect the presence of objects which come into the visual field from the side, and which may then be subjected to more exact investigation by directing the eye so that the images of them fall upon the macula.

The analogy between the conditions found in amblyopia from non-use and this temporary neglect of the image from the unoccupied eye is rendered comparatively exact in this view of matters. The use of the lens or telescope brings about what is tantamount to an error of refraction, and binocular vision is interfered with.

If, then, when binocular vision is interfered with in an adult, the brain exhibits a tendency to choose the image from one eye rather than that from the other, or if it is more easy to fix the attention on one image at a time, it is highly probable that, under similar circumstances, the same fact will hold good in the case of a child to whom binocular vision is not rendered habitual and automatic by constant use.

Treatment.—It has been stated by high authorities that no improvement can be hoped for in cases of amblyopia from non-use.

Berlin¹ considered that if the vision is below $\frac{1}{30}$ of the normal amount no improvement can be looked for; whilst Leber² stated it as his opinion that in these extreme cases even the complete loss of the hitherto useful eye is not followed by any amelioration.

More recently, Steffan³ has written that "after the strabismus is corrected, either spontaneously or by operation, the eye remains just as amblyopic as before; all attempts directed to the improvement of the vision of the amblyopic eye have proved disappointing."

With the object of testing the accuracy of these statements, several patients who had marked amblyopia have been chosen within the last five years, and treatment by education has been advocated. As the results of these experiments it may safely be said that in no case has the result been disappointing.

If the patient will follow out directions faithfully and patiently, a very large percentage, at all events, of those cases which Berlin considered as hopeless will regain a very considerable amount of vision.

¹ Berlin, quoted from Nuel, *Traité Complet d'Ophthalmologie*, Wecker and Landolt, Paris, 1887, vol. iii, p. 759.

² Leber, quoted from Nuel, *Traité Complet d'Ophthalmologie*, Wecker and Landolt, Paris, 1887, vol. iii, p. 759.

³ Steffan, "Notes on Strabismus," *Arch. f. Ophth.*, vol. xxviii, p. 547.

Details are given of the following case, which has shown a most remarkable degree of improvement, because it distinctly belongs to the class of case hitherto considered hopeless:—

A. P., æt. 21, was first seen four years ago on account of convergent strabismus, which affected the left eye. The vision of the right eye was normal ($\frac{20}{20}$), whilst the eye was hyperopic 2 dioptries. The vision of the left eye was only $\frac{1}{100}$ the normal—namely, he could only count fingers at one foot distance. This eye was myopic at the macula 3 dioptries, and astigmatic. The angle of squint was between 35° and 40° . There was no visible change in the fundus oculi which could



BEFORE OPERATION.



AFTER OPERATION.

account for so great a defect of vision as was here present, and as the squint had existed since early childhood, the conclusion was manifest that there was amblyopia from non-use. Correcting lenses gave no improvement.

Operation was offered and accepted. A very excellent result was obtained by folding the external rectus and tenotomy of the internal muscle, the eye being absolutely straight, and remaining so with free movement. After the eye was completely healed and quiet, instructions for education were given, and in the course of a month a distinct improvement in vision was noted, $\frac{1}{20}$ normal. Continued treatment by forced use of the defective eye for an hour each evening was carried on for two months more, when the vision

was found to be $\frac{1}{10}$ normal. Thereafter the improvement was more slow, but still it was steady, and at the end of a year of treatment the vision was equal to $\frac{1}{4}$ normal unaided, whilst the use of correcting lenses now raised it to $\frac{1}{2}$. Treatment was continued, the eye being used now for two hours each evening with the correcting lenses continually on. Eighteen months after the operation the formerly defective eye could see $\frac{2}{3}$ the normal, and this has been maintained fully ever since. The smallest reading types can be easily read for a considerable period without fatigue, and the patient is now able to use the eyes together to some extent, having been using a stereoscope for over a year. The great difficulty at this stage is to get such patients to understand what stereoscopic vision really is, since they have been accustomed to judge the relative positions of external objects entirely with one eye. This difficulty has, however, been satisfactorily overcome.

It is not easy to say exactly how much of the good result which has been obtained in this case is due to exercise alone, for it is probable that had the result of the operation not been practically perfect, the eyes could never have been utilised simultaneously. In conclusion, it may be said that the treatment of a case must in great measure depend upon the conditions, and that considerable care should be taken to ensure that too much exercise is not forced upon the eye. It must also be remembered that the education is largely mental, and that the subject must be carefully explained to the patient, so that he can learn to direct his attention to the defective eye, and in this way ultimately come to feel that he is seeing with it even whilst the better eye is also in use.

In the whole course of treatment of the case just quoted, there has not been any headache, though before treatment it was very frequent, and the eye itself has shown no sign of irritation.

In no case which has been under treatment was there any untoward result as regards the position of the eyes due to bandaging.

CURRENT TOPICS.

ROYAL HOSPITAL FOR SICK CHILDREN.—Dr. Norman Macnair and Dr. J. Campbell M'Clure have been appointed Extra Honorary Physicians.

GLASGOW NORTHERN MEDICAL SOCIETY.—The usual monthly meeting of the Society took place on 13th January. There was a good attendance of members. By the kind permission of the Superintendent, the proceedings were allowed to take place in the Royal Infirmary. Dr. John Macintyre gave a very interesting lantern demonstration on electro-therapeutic apparatus in the lecture room, with special reference to affections of the œsophagus and respiratory passages, after which the gentlemen inspected the new electric pavilion, and were shown the various apparatus and instruments. This is the first meeting of a scientific nature that the Society has held. The efforts of Dr. Macintyre to make the demonstration as interesting as possible were much appreciated. The meeting came to a close by a vote of thanks being accorded to Dr. Macintyre and the Superintendent of the Infirmary.

NEW PREPARATIONS, &c.

FRY'S MILK CHOCOLATE, a sample of which we have received, will be found very palatable by those who prefer this form of the sweetmeat to the plain chocolate.

FRY'S PURE CONCENTRATED COCOA AND MALTED COCOA.—We have tasted samples of the above cocoas, prepared according to the directions on the labels. Both of them make extremely agreeable beverages. The Malted Cocoa is combined with Messrs. Allen & Hanbury's Concentrated Extract of Malt, and while it possesses the properties of the latter, the pleasant flavour of the cocoa is not in any way interfered with.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1902-1903.

MEETING I.—3RD OCTOBER, 1902.

The President, DR. W. G. DUN, in the Chair.

RECENT ELECTRO-THERAPEUTIC WORK IN MEDICINE AND SURGERY.

BY DR. JOHN MACINTYRE.

Dr. Macintyre's paper will be found as an original article in our issue for November, 1902, at p. 341.

MEETING II.—17TH OCTOBER, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—FRESH SPECIMEN.

BY DR. CHAS. WORKMAN.

Hydatid cyst of liver.—The preparation was obtained from the body of T. M'I., a patient who had been under the care of Dr. Lindsay Steven for heart disease. No suspicion of the hydatid had been formed during his life.

In the upper part of the right lobe of the liver there is a cyst about the size of a turkey's egg, with a thick fibrous wall, which was adherent to the under surface of the diaphragm. Inside this outer capsule there is a thick white membrane, with secondary or daughter cysts, apparently both outside and inside the membrane, *i.e.*, springing from both surfaces of it. These daughter cysts are beautifully transparent and glassy. The outer wall of the cyst was somewhat vascular, but the inner membrane is pale, and seems to have no vessels.

The specimen shows, also, extreme passive hyperæmia of the liver, and it was preserved by the formol method in glycerine and water.

II.—CHYLOTHORAX FROM RUPTURE OF THE THORACIC OR OF ONE OF THE LARGE LYMPHATIC DUCTS.

BY DR. DAVID NEWMAN.

Severe injury of the right side of the chest, fracture of ribs and of both clavicles, followed by great dyspnœa, pain, and shock—Surgical emphysema—Effusion of blood into soft parts below left clavicle—Chylous fluid in left pleura—Recovery.

J. H., aged 36, was admitted into the Glasgow Royal Infirmary on 11th July, 1901. The patient was employed as a "brusher" in a coal pit, and while he was busy at his work a heavy stone became loosened from the roof of the working, and he was crushed between it and the floor of the passage. The exact weight of the stone is not known, but it required the combined efforts of four men to roll it off the patient's body. The distance between the floor and the roof of the passage was about 9 feet. When relieved the patient was unconscious.

On admission he was almost unable to speak on account of dyspnœa, but made known that he suffered severe pain on the left side of the chest, and soon after admission he expectorated a small quantity of blood. The left side of the chest moved slowly and defectively, and the movements of the two sides were asynchronous. All over the left side of the thorax and into the neck there was marked surgical emphysema, and this extended at some points beyond the middle line in front. Both clavicles were found to be fractured about the middle of each bone. On the left side the fourth, fifth, sixth, and seventh ribs were fractured in front, while the first three mentioned were also fractured behind close to the vertebræ. Breath sounds were present on the left side, but were extremely feeble; on the right they were normal.

12th July.—The emphysema had now almost entirely gone, and the breathing, although easier than it was yesterday, was still greatly oppressed. Since admission a considerable amount of blood became effused into the soft parts below the left clavicle, but the expectoration of blood had now ceased.

25th July.—Since admission the patient's condition was so serious that it was considered inadvisable to attempt fixing either the clavicles or the ribs in position on account of the great difficulty in respiration.

27th July.—By means of an aspirator 8 oz. of fluid blood was drawn off from beneath the left clavicle, and to-day, for the

first time, a thorough examination of the chest was permitted, and as a consequence of this examination the left side of the chest was discovered to contain a considerable quantity of fluid. There was complete dulness all over the left side of the chest. Vocal fremitus was absent at the left base, and only faintly detected below the inferior angle of the scapula, over the left scapula, and at the apex of the left lung. Vocal resonance was faintly heard at the base of the left lung, but was more distinct in the scapular and sub-scapular regions.

15th August.—Owing to the severe nature of the injury, great difficulty was experienced in getting the fragments of the clavicles into position, but an attempt was made to fix the fractured ribs.

25th August.—The physical condition of the chest was almost precisely the same as observed on 27th July. To-day an exploratory aspiration revealed the presence of a quantity of milky fluid, 30 oz. of which was drawn off.

On several subsequent occasions, as noted below, quantities of a similar fluid were removed by aspiration. It presented a distinct milky appearance, and coagulated on standing for a few minutes. On microscopic examination no leucocytes could be detected, but large numbers of fat globules and margarine crystals were found floating in the fluid. The following quantities of fluid were removed :—

25th August,	30 oz.
5th September,	30 "
6th "	40 "
11th "	80 "
13th "	100 "
21st "	200 "
28th "	110 "
	<hr/>
	590 oz.

A chemical analysis was made of the fluid drawn off on the 13th of September, with the following result (in 1,000 parts):—

Water,	915.0
Salts,	5.2
Albumin,	67.0
Fat,	7.3
Nitrogenous substances,	1.0
Loss,	4.5
	<hr/>
	1,000.0

25th October.—The patient's general health had greatly improved, and respiration was now satisfactory, although the left lung was inactive. There was still evidence of a considerable quantity of fluid in the left pleura; but as the patient was now able to go about with freedom and little or no pain, he was permitted to return home to Ireland, but he was directed to report himself on the first convenient occasion.

3rd October, 1902.—To-day the patient came to the infirmary for examination. The fragments of the left clavicle were still found to be ununited, there was also found to be a slight degree of yielding on pressure over the right clavicle, and the deformity was distinctly marked. There was also a depression on the upper part of the left chest corresponding to the fracture of the fourth, fifth, sixth, and seventh ribs. The movements of the left side of the chest were not so free as those of the right. There was dulness to percussion over the lower two-thirds of the left side of the thorax in front and behind, and comparatively the vocal fremitus and vocal resonance were diminished over that area. The breath sounds also were fainter, there was no marked displacement of the heart, some cough, but no expectoration. The patient's general condition was greatly improved, but on account of the loose condition of the clavicles, he was unable to follow his occupation, and was consequently recommended to come into the hospital in order that an operation might be performed for his relief. From point of view of the injury, it is worthy of remark that when not only the ribs, which snapped both in front and behind, but the clavicles also were fractured, the left side of the chest must have been very severely pressed upon by the stone—in fact, almost flattened.

In considering the pathology of so-called chylous extravasations either into the thorax or into the abdominal cavity, a clear distinction must be drawn between those cases in which the milky aspect of the fluid is due, on the one hand, to the presence of chyle, or, on the other, to fatty degeneration of cells floating in an inflammatory or other exudation. When the fluid is chyle which has escaped from the thoracic duct or from one of the larger lymphatic channels, then the chylothorax has been described under the term "hydrops pleuræ chylusus" or true chylothorax. In this condition the fluid not only presents a milky appearance, but the fat granules, globules, or crystals float free in the fluid, and, as a rule, the effusion coagulates on standing. In false chylothorax, or what has been called by Quincké "hydrops pleuræ adiposus," the

milky aspect of the exudation is due to fatty degeneration of cells which float in it, leucocytes or endothelial cells which have degenerated. In this condition the fat is included within the cell walls, seldom floats free in the fluid, and the medium in which the cells are suspended does not coagulate on standing. With the latter form of chylothorax we have nothing to do at present, but attention will be drawn to a few facts in connection with true chylous pleural exudation.

The extravasation of chyle into the pleural sac may be due either to obstruction to the flow of chyle, or to rupture of the thoracic duct or receptaculum chyli. In the majority of cases the rupture has been the result of injury, such as was seen in the case above described. Thaden records an instance in which a man had many ribs fractured, resulting in a pneumothorax and extravasation of a quantity of fluid into the right pleura. Paracentesis was performed shortly after the accident, and over 80 oz. of blood withdrawn. A few days later 140 oz. of clear fluid, slightly blood-stained, were removed, and was found to contain small fatty particles suspended in it; later on 115 oz. were withdrawn from the pleura, and this last quantity of fluid was nearly clear. Analysis of the fluid showed that it closely resembled chyle. Rupture also has been produced by the paroxysms of coughing during whooping-cough. Wilhelm records such a case. Then, again, chylous hydrothorax may be a consequence of erosion or obstruction to the thoracic duct as a result of disease. Neurenkirchen reports a case in which chyle was discovered in the chest of a woman, and removed by paracentesis on several occasions, and from which the patient made a good recovery. Rokitsky describes a very interesting case where the lesion we are discussing was associated with great dilatation of the heart as a sequel to mitral regurgitation—one in which milky fluid was not only effused into the thorax, but also into the peritoneal cavity, as a consequence of dilatation of the abdominal lymphatics and of the thoracic duct. Cases have also been brought forward in which chylous ascites and chylothorax have been due to thrombosis of the jugular and subclavian veins, in which the clot extended into the thoracic duct (Sidney Martin). Enlarged lymphatic glands, either from tuberculous lesions or from cancer, may lead to obstruction or erosion of the thoracic duct or of the lymphatics in the mediastinum. It is a fact worthy of note that in several cases where a large quantity of fluid has escaped into the pleural cavity, and where a rupture of the duct or one of the larger lymphatics may be reasonably supposed to have

occurred, no rupture of the duct could be discovered *post-mortem*. This is difficult to explain if the examinations were carefully performed. In the case above recorded it is rather remarkable that the patient has steadily gained in strength and weight since his dismissal from the hospital on 25th October, 1901, as one would imagine that the escape of such a large quantity of chyle into the pleura would lead to slow starvation, but probably the explanation is that the pleural sac comes simply to be a huge receptaculum chyli, and that after the fluid accumulates to a given extent, the pressure exerted by it prevents further escape from the thoracic duct. Neurenkirchen's case had chylous fluid in the thorax for a period of over six years, and seemed to enjoy good health until the quantity of fluid increased to such a degree as to impede respiration, but when paracentesis was performed and relief afforded to the breathing she suffered little discomfort. In most cases, however, the lesion has led to a fatal issue.

III.—A CASE OF MALIGNANT DISEASE OF THE PYLORUS, IN WHICH GASTRO-ENTEROSTOMY WAS SUCCESSFULLY PERFORMED.

By DR. D. M'KELLAR DEWAR.

J. B., 64, blacksmith, Coatbridge, was admitted to Ward 12, on 27th May, complaining of pain in the stomach and loss of appetite, of three years' duration.

The pain at first was of a gnawing character, especially after heavy work. No sickness or vomiting. Improvement took place for a short time under medical treatment, but the pain never entirely disappeared. Appetite variable, but was usually impaired. The bowels were always constipated, and there was occasionally slime in the motion. He never passed any tarry motion, but the fæces were sometimes tinged with blood.

Though not emaciated, he seems to have lost flesh. Physical examination shows some slight abdominal distension, but this soon disappeared. Widely distributed Hippocratic succussion is observed, and later peristalsis from left to right. No tumour was at first detected, but on 7th June Dr. Middleton observed a tumour in the pyloric region. This was confirmed by Dr. Newman on 10th June, and he was removed to Ward 16 for operation.

At a point 2 inches above and to the right of the umbilicus there is a spot which is distinctly tender, and there is a feeling of resistance.

The patient is anæmic, and can take no food, except milk, without discomfort. The dilatation of the stomach is great.

On 13th, patient vomited after taking some beef-tea, but there was no blood on testing.

With the assistance of Dr. A. Laurie Watson, gastro-enterostomy was performed on 23rd June, a Murphy's button being used. The patient stood the operation well. Until 27th June the feeding was entirely rectal, and he is entirely free from pain—a condition he has not experienced for three years. On 27th he was allowed a little soda and milk. Feeding by the mouth was increased gradually, while the rectal feeding was decreased until 4th July, when it was entirely stopped.

A skiagram on 9th July showed the button in the neighbourhood of the ileo-cæcal valve. To-day, the patient is allowed to sit up and eat fish.

12th July.—The patient continues in the best of health; the stomach has markedly diminished in size. Further skiagrams fail to discover the button.

15th August.—The patient went home in excellent health, having put on flesh markedly.

Dr. Middleton said the man has greatly improved in general appearance since the operation. The tumour cannot be made out so easily as it could be before the operation, but the liver is now slightly enlarged.

Dr. Newman said when the growth is at the pylorus, a gastro-enterostomy gives absolute rest to the pylorus, and the growth may undergo some repair.

Dr. Rutherford thought Dr. Newman had rather exaggerated the amount of repair occurring after rest, but the change was due to a diminution of the irritation. The long duration of the tumour pointed to a simple rather than to a malignant growth.

Dr. Dewar replied.

IV.—ADENO-CARCINOMA OF KIDNEY UNDERGOING COLLOID DEGENERATION.

BY DR. D. M'KELLAR DEWAR.

G. K., aged 42, miner, from Overtown, by Wishaw, was admitted to the Royal Infirmary on 26th June, 1902.

A fortnight previously he had consulted his doctor about blood in his urine, and after examining him he advised him to enter the infirmary.

The bleeding seems to have been profuse at first, but in the course of four days the urine became quite clear.

At no other time had he noticed any abnormality in his urine, nor had he ever suffered from any pain or uneasiness of any kind.

He has always enjoyed good health, and there is nothing of note in the family history.

Examination shows a large hard swelling in the right renal region, about the size of an ostrich egg. The surface is nodulated, three bosses being distinctly felt. This renal mass moves with respiration, and can be pushed backwards and also inwards. There is neither pain nor tenderness on pressure, nor does any movement or position produce any dragging sensation, or, in fact, any inconvenience.

The heart and other organs are apparently normal. The urine is slightly acid in reaction, with a specific gravity of 1020. No trace of albumen, sugar, or blood can be discovered.

With the assistance of Dr. A. Simpson Wells, lumbar nephrectomy was performed on 30th June, in the lines of the usual incisions. At the operation the growth was found to extend along the course of the ureter, and that tube was ligatured at a level of 2 inches below the site of ligature of the renal vessels. The operation was entirely extra-peritoneal, and a drainage-tube was inserted. By the end of the first day after the operation, 13 oz. of urine were drawn off, and the patient next day passed 32 oz. without any inconvenience. Till he left the infirmary, the daily average of urine passed was 45 oz. The patient made uninterrupted progress towards recovery, and was dismissed well on 8th August. At no time was any abnormality found in the urine while he was in hospital.

On section, the kidney presented its normal appearance in the upper third and in its lower extremity for about 2 square inches. The rest of the organ was replaced by a firm nodulated growth of a dirty whitish-yellow colour.

Microscopic examination showed it to be adeno-carcinoma undergoing colloid degeneration.

Remarks.—This case is interesting from several points of view. Though cancer of the kidney is by no means rare, colloid degeneration is very uncommon. I find there is only one specimen in the museum of the Royal Infirmary, and it was obtained *post-mortem* over thirty years ago. Dr. Newman, in his book on *Surgical Diseases of the Kidney*, describes this case. Clinically, the case is worthy of remark for the entire absence of symptoms; the appearance of blood

in the urine was the only sign that drew the man's attention, and compelled him to seek medical advice. Palpation on the part of the medical attendant revealed swelling, which the man had not noticed, on the right side, and prompted him to send him to the hospital for treatment.

In fact, since he entered the infirmary, that was the only sign of tumour; all other signs and the symptoms were conspicuous by their absence. Pain is almost invariably present in cancer of the kidney, but the patient had none, not even uneasiness. Cancer of the kidney is usually attended by anorexia and vomiting, but these were absent. His appetite remained good, and he lost no flesh.

The hæmaturia, which I did not see, occurred, so far as we could learn, only once. The urine while he was with us was normal.

Before operation the diagnosis rested only on the presence of blood in the urine and what could be made out by palpation.

The absence of pyuria, pain, and of any interference with the general health pointed in the direction of a benign growth; the hæmaturia pointed towards malignancy, and that of cancer and not of sarcoma.

Again, sarcomatous tumour is usually very regular in form, and has a smooth surface. Palpation in this case revealed an irregular outline with prominent bosses, and prompted to diagnosis of cancer, which the operation confirmed.

Dr. David Newman said—*Dr. Dewar* is to be congratulated not only on the success of his operation, but also in having to operate on a very rare form of renal disease. The patient was recommended to me, but as I was absent on holiday, I asked *Dr. Dewar* to take charge of the case. Cases of colloid disease of the kidney are very rare, only five instances of the disease having been recorded, as far as I know—one by *Rokitansky*, and others by *Gluge*, *Dickinson*, and *Schuppell*. I published a fifth case in *Surgical Diseases of the Kidney*, and the specimen is in the museum of the Glasgow Royal Infirmary. It was removed from a patient of *Dr. Robert Perry*. The tumour was larger in size than an orange, and projected from the convex margin of the right kidney.

As in all other forms of malignant disease, the only hope is in an early diagnosis from the symptoms, confirmed by exploration in cases where the symptoms point in the direction of malignant tumour. If nephrectomy can cure a reasonable minority of such cases, the operation is not only justifiable but it is demanded, seeing that the other alternative is certain death.

The advantages of an early operation are clearly shown by statistics. Up till 1888 the mortality in nephrectomy for malignant disease of the kidney was well over 70 per cent, whereas, from statistics I have collected recently, including cases operated upon between 1888 and the present time, the mortality is well below 20 per cent. The death-rate has been greatly reduced during the last few years, as a result of greater enterprise on the part of the surgeon, who is now, fortunately for the patient, asked to see him at a reasonably early stage of the malady. In hospital practice, as well as in private, I find that physicians are alert, and fully recognise that an early operation gives the patient the best chance. As soon as they suspect malignant disease they seek the aid of the surgeon in order that the kidney may be explored and the diagnosis completed. From symptoms alone the diagnosis is not always easy. The most important symptom is hæmaturia. In cancer of the kidney about 75 per cent of the cases present hæmaturia as a prominent symptom. It is not commonly severe in the early stages, and it is only as the disease advances that the loss of blood becomes marked. The hæmaturia is steadily progressive, is less transient than when due to other causes, and is generally spontaneous and continuous, although at intervals liable to aggravation. Clots frequently form; these may occasion obstruction to the escape of urine; it is then that the patient complains of pain. While the most profuse renal hæmaturia are those met with in malignant disease, on the other hand, enormous soft round-celled sarcomata may exist and develop without any blood appearing in the urine, or any other disturbance in the excretion indicative of the locality of the disease.

Therefore, the early diagnosis is not always easy. Having determined by the use of the cystoscope that the hæmaturia is not vesical; that the blood is escaping from the ureter only; that the swelling in the lumbar region is on one side only; that there are no other abnormal constituents (such as pus, tube-casts, crystalline deposits, or tubercle bacilli) in the urine; then the strong presumption is in favour of tumour, and an exploration should be made to determine the nature of the malady. Early diagnosis by exploration and successful treatment go hand in hand.

V.—AMBLYOPIA FROM NON-USE.

By DR. LESLIE BUCHANAN.

Dr. Buchanan's paper appears as an original paper at p. 106.

MEETING III.—7TH NOVEMBER, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—SNAKE VENOMS: THEIR PHYSIOLOGICAL ACTION AND ANTIDOTE.

BY DR. GEORGE LAMB.

Dr. Lamb's paper appears as an original article at p. 81.

II.—THE HISTOLOGICAL APPEARANCES OF THE NERVOUS SYSTEM IN KRAIT AND COBRA POISONING.

BY DR. W. K. HUNTER.

Dr. Hunter's paper appears as an original article at p. 98.

MEETING IV.—21ST NOVEMBER, 1902.

The President, DR. W. G. DUN, in the Chair.

I.—VOLKMANN'S CONTRACTURE OF THE FORE-ARM FOLLOWING FRACTURE.

BY DR. G. EDINGTON.

Dr. Edington showed a patient the subject of Volkmann's contracture of the fore-arm following fracture. As he intends to show the case after operating, he reserves a description of it until that time.

II.—CASE OF BEZOLD'S MASTOIDITIS.

BY DR. J. KERR LOVE.

Miss L. was sent by Dr. Henderson, Kirn, on 23rd March 1902. A month previously the doctor opened an abscess about 3 inches behind and below the mastoid process, and

removed 3 to 4 oz. of pus. On probing through the wound the probe reached to the mastoid process. Improvement continued for three weeks, when pus again reappeared, and the skin over the mastoid itself became red and tender. There was said to be no ear discharge.

On 23rd March I found tenderness and lividity over the tip of the mastoid process, but none over the neighbourhood of the antrum. Mastoid auscultation gave increased sound over the mastoid tip, but none over the antrum. There was a sinus about an inch below the mastoid tip, and another $2\frac{1}{2}$ inches farther down in the same direction. An inch farther down still was a swelling which was red on its surface, hard, but without fluctuation. On 26th March the sinuses were slit and packed. On the 29th the radical mastoid operation was done. With the speculum it had been discovered on the 23rd that a little discharge lay in the external auditory canal, and that this exuded from a small sinus in the posterior wall, through which the probe detected bare bone. At the operation the sinus was found to communicate with the aditus and antrum. All the mastoid cells towards the tip were found to contain a reddish pulp, but nothing was found in the antrum itself. There was no mastoid periostitis on the outer aspect of the bone, where the periosteum was adherent over a perfectly healthy surface. Infection had evidently taken place through the cells near the tip into the digastric groove, where Dr. Henderson's probe struck the bone at the time the first abscess was opened. When polishing up the cavity previous to stitching mastoid wound, the facial nerve twitched. At the end of the operation it was found partially paralysed, in two hours it was totally paralysed. In two days the muscles of the face became painful and swollen, in about a week the nerves began to recover, and in a month the power had fully returned to the facial muscles. The mastoid wound healed at once, the sinuses in the neck in about five weeks, and in seven weeks all discharge had ceased from the ear. On 21st May hearing was tested. Whispered speech was heard at 20 inches, and low conversation was easily heard. At this date (28th November) the condition remains the same, no further discharge having occurred. Hearing has not further improved, and sounds tend to be referred to the direction away from that in which they actually originate.

Dr. Walker Downie was inclined to question the diagnosis in this case, for in Bezold's mastoiditis the abscess forms under the deep cervical fascia, and is the result of perforation of the

inner table of the mastoid in the neighbourhood of the digastric groove. The pus in such a case burrows downwards towards the mediastinum, or inwards towards the pharynx, in which latter case it may end as a retropharyngeal abscess. In Dr. Love's case the pus appeared superficially and in the posterior triangle of the neck, and he did not discover at his operation any perforation of the inner table of the mastoid. Little over two months ago Dr. Downie had a case of Bezold's mastoiditis in a man, about 40 years of age, from Glassford. The man had had pain over the left mastoid region for weeks, accompanied by headache and loss of flesh and strength. He also had an increasing sense of stiffness of the neck, and latterly his speech had become thick. He had had slight discharge from the left ear for many months. There was evident mastoiditis. There was, in addition, fulness behind the angle of the left lower jaw, where there was pain on palpation, but no pharyngeal swelling could be seen or felt. The mastoid antrum was exposed along with the upper cells, but no pus found in them. The cells were then traced downwards, and near the tip of the mastoid there was a large bone cavity containing pus. On attempting to dry out the pus the cavity at once refilled—welled-up—and it was then found that the inner table was perforated, and that through the perforation, which was fully a quarter of an inch in diameter, a probe could be passed downwards and inwards for a depth of 3 inches. The pus cavity was washed out, and a long drainage-tube inserted. From its direction and depth a counter-opening could not be made. For several days at each dressing pus welled-up when pressure was exerted over an area 2 inches below the tip of the mastoid, but slowly the quantity became less and the large cavity granulated up, the wound healed completely and satisfactorily, and the patient was dismissed from the infirmary fully three weeks ago.

Dr. Love replied.

III.—NOTES ON THREE HEAD CASES.

BY DR. FORDYCE MESSER.

CASE I. *Case of cerebral hæmorrhage.*—The patient was a young man, about 20 years of age, who for years had been troubled with severe headaches and bleedings from the nose. He returned from business one evening complaining of an intense headache. A seidlitz powder and antipyrin were prescribed. He went to bed, and after a

short time the headache became less intense. About three or four in the following morning he gave a loud cry, turned to his side, and became unconscious. He died early in the following forenoon. At the *post-mortem* examination a large blood-clot was found in the brain. The bulk of the clot was recent, but there were also some small, hard masses, which Dr. Messer looked upon as old blood-clot.

CASE II.—A young girl, æt. 17. When Dr. Messer was called to see this patient she was suffering from aphasia, which he learned had developed gradually. Her condition slowly got worse. She became sleepless and childish, and ultimately passed into a comatose condition. After death her head was examined. A large quantity of fluid escaped when the dura mater was removed, and all the ventricles were found distended with fluid. The fluid was examined by Dr. John Duff, who found crystals in it, which, he thought, might be accounted for by the breaking down of blood-clot. This girl had her head injured the winter before she died.

CASE III.—J. B., a strong, well-built man. Some months before his last illness he injured his shoulder, and after a time what Dr. Messer would call subluzation of the scapula developed—*i.e.*, the scapula stood out like a bird's wing. This condition improved with massage and electrical treatment. Some time later he complained of weakness and sleeplessness, which no treatment could improve. He began to have delusions, and hesitated in his speech. His pulse was weak, but not rapid; temperature was a little above normal; knee-jerks were a little diminished. He gradually became weaker, and was unconscious for four days before he died. The brain was examined, but nothing unusual was found.

IV.—THE CHEMICAL AND PHYSIOLOGICAL PROPERTIES OF PLASMON.

BY DR. CARSTAIRS DOUGLAS.

Dr. Carstairs Douglas read a short paper on the chemical and physiological properties of plasmon, one of those foods formed on a milk basis which had lately been used somewhat extensively. In process of manufacture, thoroughly creamed milk was taken, so as to have a minimum of fat present, and the caseinogen was precipitated by glacial acetic acid, and

dried in a stream of carbon dioxide gas. The result was a smooth, light, yellowish-white powder. The writer, from his analysis, found it to contain about 10 parts of water and 90 of solids per cent—the later being nearly all proteid (about 80), while most of the remainder was salts. There was both a trace of fat and very little sugar (1 to 2 per cent). It was thus a highly concentrated proteid food. During its administration, Dr. Douglas found that the excretion of urea and phosphoric acid was distinctly increased, the uric acid being unaffected. It also occasioned a moderate digestion-leucocytosis. In concluding, the writer described certain other preparations in which plasmon was incorporated, and said it appeared to him to be a food capable of ready absorption and assimilation, and suited for use in cases of diseases where there was, or had been, marked nitrogenous waste.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1902-1903.

MEETING II.—26TH NOVEMBER, 1902.

The President, DR. J. NIGEL STARK, in the Chair.

I.—SPECIMENS.

1. *Dermoid cyst of right ovary* (shown by Dr. Russell in the absence of Dr. Edgar, who had removed the tumour this morning by abdominal section).—It is of small size, is almost filled with hair, and has tooth-like projections on its inner wall. It had caused obstruction at labour four months ago, but under chloroform anæsthesia the tumour was pushed up, and labour completed with forceps. The patient is 29 years old, and a iii-para. The first labour was instrumental, with an obscure history of "something in the way;" the second was easier, and did not require the use of forceps.

2. *Curettings from a case of hæmatometra*.—Dr. A. W. Russell showed material consisting of placental and membranous tissue, old and recent blood-clot, and fluid blood, and measuring 10 oz. in all, which was obtained by dilatation and curettage this morning. Patient, aged 26 years, has had three

pregnancies, the last three years ago. Up till September menstruation had been regular, but in September and October there had been an interval of six weeks, after which hæmorrhage recurred intermittently and irregularly. She was carefully examined under chloroform this morning, and after dilatation of the cervix curettage was performed. The whole of the *debris* measured 10 oz. It was found that the placenta was inserted on the lower uterine segment, and was therefore a placenta prævia, which, by closing the cervix, had helped to produce the hæmatometra.

3. *Interstitial fibroid and uterus removed by hysterectomy* by Dr. J. Nigel Stark.

4. *A four-pronged modification of Bossi's cervical dilator*, shown by Dr. R. Jardine.

II.—INFANTILE OBSTETRICAL PARALYSIS OF THE SHOULDER.

By MR. R. H. PARRY.

Three cases of the above have been under my care in the Royal Hospital for Sick Children within the past two months, and as they possess some features of interest, I am glad of the opportunity to bring them before you.

The first case, a boy, 1 year old, is a good example of injury to the fifth root of the brachial plexus; the muscles affected are the deltoid, biceps, brachialis anticus, supinator longus, and spinati. A reference to the accompanying table (p. 132) will show that the fifth cervical nerve supplies these muscles. On examination, the left arm is seen to hang fully extended by the side, the palm of the hand is directed outwards and the thumb backwards, this position of the hand being maintained by the pronators.

As will be easily demonstrated presently, the child cannot raise his arm from the side, nor flex the fore-arm, nor supinate the hand. He retains, however, the power to adduct and to extend the arm; the former movement by the action of the costal part of the pectoralis major, and the latter by the triceps. The grasp of the hand is good, and there is no wrist-drop. There is much atrophy of the deltoid, biceps, and spinati muscles, in consequence of which the bony eminences about the shoulder appear unduly prominent.

The second case, a girl, 2 years of age, is also an example of injury to the fifth cervical nerve. Accordingly, it presents the same features in respect of the muscles affected, but on the right side. It should be added, however, that extension movement at the elbow and the grasp of the hand are more feeble than in the case of the first patient, and the question arises, whether the sixth and seventh roots may not also be involved.

On referring again to the table, it will be seen that the

DISTRIBUTION OF SPINAL NERVE ROOTS.

(After Starr and Edinger.)

NERVES.	MUSCLES.
Cervical—2, 3.	<ul style="list-style-type: none"> Sterno-mastoid. Trapezius. Scaleni. Small rotators of hand.
4.	<ul style="list-style-type: none"> Diaphragm. Lev. ang. scap. Rhomboids. Spinati. Deltoid.
5.	<ul style="list-style-type: none"> Supinat. long. Biceps. Supinat. brev. Serrat. mag. Pectoralis (clav.)
6.	<ul style="list-style-type: none"> Teres minor. Pronators. Brachialis ant. Triceps.
7.	<ul style="list-style-type: none"> Long extensors of wrist and fingers. Pectoralis (costal). Latiss. dorsi.
8.	<ul style="list-style-type: none"> Teres maj. Long flexors, wrist and fingers.
Dorsal—1.	<ul style="list-style-type: none"> Extensors of thumb. Intrinsic hand muscles.

triceps and flexors of hand are supplied from the sixth and seventh roots. The right side of the face appears somewhat smaller than the left, and there is, perhaps, a slight ptosis of the right eyelid, but no squint.

There was in this case a torticollis, and some thickening immediately above the clavicle, due, no doubt, to laceration of the sterno-mastoid and of the scalene muscles at birth.

In the third case, a boy, aged 6 months, the fifth, sixth, seventh, and eighth cervical nerves appear to be implicated, inasmuch as all the muscles of the limb, with the exception of



CASE III.

the costal portion of the pectoralis major and some of the intrinsic muscles of the hand, are paralysed.

The left arm is soft and flabby, and hangs limp by the side. The hand does not assume a definite position as in the other two cases, owing to the fact that the pronators, as well as the

supinators, are paralysed. The natural contour of the shoulder is much changed, due to wasting of the muscles, especially the deltoid.

No response was obtained in any of the muscles to the faradic current.

There is a subluxation forward of the head of the humerus, brought about, I take it, by the unopposed action of the pectoralis major.

The fact that the nerve supply of this muscle remained intact led to careful observation of some of the other muscles supplied by the eighth cervical and first dorsal nerves, with the result that it has been definitely ascertained that slight flexion of the fingers takes place.

In all three cases there is a history of difficulty at the birth. In the first two the breech presented, and during the descent of the body an arm slipped over the head, and in one became hooked over the occiput. In the third case, a cranial presentation, the forceps was used to terminate a long and tedious labour, and resuscitation was effected with some difficulty, artificial respiration being continued for one or two hours.

With reference to the manner in which the injury may be brought about, the investigations of Schoemaker on the cadavar are of much interest and importance.

In a paper which appeared in the *American Gynecological and Obstetrical Journal* (January, 1901), Thomas gives the following summary of Schoemaker's experiments:—

"If the child's neck were stretched in the direction of the axis of the body, the upper roots of the brachial plexus were put upon tension, not materially increased by bending the head forward or backward, or rotating it, but very much increased if the head were bent laterally, the fifth root being most stretched, the sixth next, and the seventh and eighth much less. The fifth and sixth roots of the brachial plexus were constricted when the shoulders were compressed and pressed upwards, and especially when the arms were elevated above the head. The constriction occurred between the clavicle and the transverse process of the sixth cervical vertebra, being so great as to make an indentation on the nerve roots. If the forceps were applied at an angle of about 30 degrees, Erb's point was compressed. In labour, in head presentations, the first danger is from pressure by the clavicles; but this is slight unless the shoulders are compressed and pressed toward the head. After the head is born, and hanging over the perineum, with the woman on her back, the

plexus may be injured by stretching; and if traction is made with the head bent toward one shoulder, there is great danger of overstretching the plexus. Where the obstetrician's fingers are placed in the axilla, and strong traction made to deliver, the clavicle may be raised and the plexus be compressed against the spinal column.

"In forceps cases, the danger from overstretching is greater than that of direct injury to the nerves from the instrument.

"In breech cases, constriction and pressure of the shoulder are especially liable to occur."

Prognosis.—These cases do not furnish a basis for a favourable prognosis, and judging from the few cases recorded of complete recovery, it is to be feared that the paralysis becomes permanent or improvement only partial.

Treatment.—*Massage and gentle exercises* had been tried in all from shortly after birth, and although the result has so far been far from encouraging, still it is advisable to persevere with this line of treatment.

Electrical treatment, advocated by most writers on obstetrical paralysis, is not easy of application in very young subjects, and, as pointed out by Dr. Love, it would be found necessary, in order to carry it out effectually, to administer an anæsthetic.

In only one (the second case) was the question of *surgical interference* raised. The child, a patient of Dr. A. W. Russell, was seen by Drs. Finlayson and Love, who suggested that something might be done in the way of nerve anastomosis, or by attaching portions of a healthy muscle to a paralysed one, to improve the movement at the shoulder. As already mentioned, there was evidence that the sterno-mastoid and the scalene muscles had been damaged, and as the roots of the plexus pass between the scalenus anticus and medius, and the injury was limited mainly to the fifth root, it was thought proper to explore the plexus before acting on the suggestion made by Drs. Finlayson and Love.

Operation.—An incision was made over the sterno-mastoid, and the latter divided transversely near its lower attachments. The scalenus anticus was then defined, and the various structures in relation to that muscle carefully noted, the phrenic nerve calling for special consideration.

The fifth, sixth, and seventh nerves, and the trunk of the eighth and the first dorsal, were next looked for at the outer margin of the scalenus anticus, and each was carefully examined.

On seizing the first with a dissecting forceps, no contraction of the muscles supplied by it took place, but on applying

pressure to the other roots, the response in the muscles of the fore-arm and hand, and in the pectoralis major, was very prompt and marked.

It was found impossible to determine accurately, from the contractions induced in the muscles, the distribution of each root.

On tracing the nerves towards the spine, no difficulty was experienced in freeing the seventh; the sixth, however, was more intimately attached, while the fifth was firmly adherent to the scalenus anticus, and it was found necessary to remove the upper part of the muscle to avoid damaging it.

A small neuroma was present near where it joins the sixth, and the sheath of the nerve was no longer recognisable as such.

Comparatively few opportunities have been afforded of determining the state of the nerves in obstetrical paralysis, and the facts just detailed in connection with the fifth nerve may serve to explain the tardiness of recovery.

No attempt was made to remove the neuroma owing to its proximity to the sixth nerve.

The other points in the operation do not call for special remark, but it may be added that the wound healed without trouble.

Although no marked improvement has followed the operation, which was performed three months ago, still the parents affirm that the child makes a greater effort to use the arm.

DR. BARCLAY NESS showed a case of obstetric paralysis somewhat similar to the others, in which slight improvement had taken place without special treatment.

DR. JOHN LOVE presented a young man, of about 18, to show the amount of spontaneous recovery that may at times occur in even a severe case of obstetrical paralysis of the arm.

No account of the early condition of the limb was obtainable, but the patient understands that the paralysis dated from birth; that it had been of a severe type seemed to be more than probable, as now, with practical recovery of function, there was marked asymmetry of the arms, the left being much the smaller, and this most notably in the proximal segment and shoulder girdle; the humerus, scapula, and clavicle of the affected side being much the smaller.

There was no blueness nor coldness of the arm, sensation in all its forms was perfect, the tendon-jerks in the legs were normal, and the foot-sole reflex was of the flexor type on both

sides, and the palpebral clefts were equal; the nerves and muscles gave quite normal responses to both faradic and galvanic currents.

There is an associated fixed torticollis of the opposite side, and the left frontal eminence shows a slight depression; he has never had any fits, and intellectually he is quite up to the level of his class. As far as the patient knows, no treatment had been adopted except a tenotomy for the torticollis some six or seven years ago, which had not improved matters much, and it was on account of the wry-neck that he came under observation a few days ago.

Dr. A. W. Russell related the history of the first case on which Mr. Parry had operated. The mother was advanced in years for a i-para, being 38 years of age at the birth of the child. Labour was lingering and laborious, there being great delay and difficulty in the dilatation of the birth canal. The presentation was a breech, right dorso-anterior. The arms became extended, and were got down with great difficulty, but what at the time seemed sufficient care was taken to avoid injury, and there were no external marks of violence. Paralysis of certain muscles of the right shoulder and arm, constituting the form known as Duchenne's or Erb's paralysis of the shoulder, soon became apparent. As this did not pass off in the course of time, the child was seen by Dr. Love, and we agreed to submit her to Mr. Parry for consideration as to the possibility of helping her by operation. Whatever may be the ultimate result, Mr. Parry deserves to be complimented on the skill he displayed in the operation, and on the pains he has taken to discover the cause of the condition and relieve it. There is no doubt that the child has already slightly greater freedom of movement of the arm.

III.—CASE OF CEREBRAL DIPLEGIA WITH A HISTORY OF ASPHYXIA NEONATORUM.

By DR. R. BARCLAY NESS.

The patient is a boy, aged 2 years and 10 months.

The mother, who is quite an intelligent woman, states that she has had in all seven children, and that this is the only child in which there is anything "unnatural."

She states that this child, like the others, was born at full time. When labour commenced she sent for the doctor, and on his arrival he administered what she called "labour tea."

In about ten minutes the labour pains, she says, were "fearful," and in about two hours the child was born.

The first remark thereafter that she heard, was to the effect that the child was dead, and she was asked whether or not she had felt any movement that day, to which she at once replied, "Yes." The child was livid—"like the grate," as the woman in attendance said—and it was considered dead. This, however, was recognised not to be really the case, as the child, some little time after, was seen to give a gasp. The condition had really been one of "asphyxia neonatorum."

The doctor, after continuing artificial respiration and other means at his disposal with great perseverance for about two hours, succeeded in resuscitating the child, but the condition only passed off gradually. Next morning the colour of the child was natural, but the friends at the time were surprised that the child did not cry. The condition was neither accompanied nor followed by convulsions.

During the first six months of infancy the mother considered everything in regard to the development of the child natural, but at about this period she noticed the peculiar movements of the hands when he attempted to grasp anything. Then she realised what had always been a fact—that the child could not sit properly upon her knee. He required always to be supported by her arm on his back; this is the case up to the present time.

Another fact that has attracted her attention is that the child, when much handled, as in putting on his clothes or when in his bath, becomes quite rigid, the rigidity being the result of tonic contraction of the muscles of the trunk and limbs from reflex stimulus. Another fact noticed by herself is that the child's most comfortable position when on her knee is to have the legs crossed.

On examining the child, you will easily make out the rigidity affecting both arms and legs. In the legs this is best appreciated by abducting them. The spasm of the adductor muscles is usually well marked, and it is this which so commonly leads to crossing of the legs.

Associated with this spastic rigidity is the difficulty in movement. Both of these facts are very apparent when the child is induced to make any attempt to walk.

"The cross-legged mode of progression" is not, however, so evident here as in many other cases, where the spasm of the adductor muscles is much greater and the child older.

The spastic paralysis now described is associated with increased reflexes, most easily shown in the case of the

knee-jerks. Ankle clonus is not so readily elicited on account of the muscular spasm.

A similar spastic condition exists in both arms, and is associated with awkward movements whenever any attempt is made by the child to catch a hold of anything. It is like "athetosis," though not in its most typical form.

Over and above these facts you will notice a strabismus and a drawing of the face to the right side when the child cries. These are facts, however, that the mother has only observed lately. The facial condition, I think, is associated with a greater degree of paresis in the left arm and leg than is evident in the right side.

I may now, in the absence of the mother, state that evidently, although the child can hear and see, his intelligence is not by any means equal to that of a child of about 3 years old. The mother, however, thinks his intelligence is good, that he notices people quickly, and is attracted by what they do. He, however, cannot speak beyond saying a few monosyllables. He has not yet been taught to be cleanly in his habits. There is nothing to state with regard to any abnormalities or diseased condition of other organs.

I made inquiry into the family history, both on the father's and mother's side. Nothing of importance was elicited, unless the fact that the father in his early days was addicted to alcohol. Three years before marriage, however, he became a total abstainer, and he remained such until the patient was 6 months old. Since then he has returned to his old habits.

Now, as regards the actual cause of the paralysis, I don't think there can be any doubt that it was the result of the "asphyxia neonatorum," which induced meningeal hæmorrhage. The credit of suggesting this as a cause of the condition belongs to Little, who made a communication¹ on the subject to the Obstetrical Society of London in the year 1861.

Little's position was afterwards proved to be correct by the *post-mortem* examinations of M'Nutt,² who found that when hæmorrhage did occur it was usually basal in cases of head presentation, while extravasation over the cerebral hemispheres occurred more commonly in cases of foot presentation.

¹ W. T. Little, M.D., "On the Influence of Abnormal Parturition, Difficult Labours, Premature Birth and Asphyxia Neonatorum on the Mental and Physical Condition of the Child, especially in Relation to Deformities," *Transactions of the Obstetrical Society of London*, 1862, vol. iii.

² M'Nutt, *American Journal of Obstetrics*, January, 1885; and *American Journal of Medical Sciences*, January, 1885.

It is probable, however, as Gowers remarks, that the cortical hæmorrhage also occurs in cases in which the head is born first.

Such hæmorrhages, then, do occur in difficult cases of parturition, and may produce the condition now variously described as Little's paralysis, cerebral birth paralysis, apoplexia neonatorum, cerebral diplegia, &c., but a condition quite similar in its clinical features may occur where parturition has been perfectly normal, where no difficulty was experienced, and where the child showed no signs of asphyxia. Little recognised this himself, because a great number of his recorded cases are simply those of premature labour. He did not, however, as far as I know, suggest the real cause in these cases.

Pierre Marie¹ has suggested the non-development or the arrest of development of the crossed pyramidal tracts as a cause of this form of spastic paralysis. In the human embryo 12 centimetres ($4\frac{1}{2}$ inches) in length, the pyramidal tract appears to be completely absent, although the other tracts of the cord can be distinctly perceived. They are in all probability formed towards the middle or end of the fifth month of foetal life, but not complete until four months later. Premature birth may therefore have some possible connection with the arrest of development of the connecting pathway between the cortical centres of the brain and those of the spinal cord.

Possibly Collier and Russell² are right in their suggestion that there is a common cause bringing about premature labour and arrest in the development of this particular part of the central nervous system of the fœtus. Such agencies, I think, could easily be found in alcoholism, syphilis, tuberculosis, &c., but it is quite possible that such agencies might act in preventing the full development of the central nervous system, and yet not act in producing premature birth.

Hence, you may have cases of cerebral diplegia, with a history of "asphyxia neonatorum," others with a history of premature birth, and yet, again, others with no such history. This aspect of the question I presented to the Pathological and Clinical Society last year, when I showed three cases³ of cerebral diplegia, one where birth was premature by two

¹ Pierre Marie, "Lectures on Diseases of the Spinal Cord," Translation, The New Sydenham Society, 1895, p. 12.

² Collier and Russell, "Cerebral Diplegia," *Brain*, 1895, part lxxxvii, p. 373.

³ Ness, "Three Cases of Cerebral Palsy," *Glasgow Medical Journal*, September, 1901, p. 210.

months, and other two—who were sisters, an important fact—where there was no history of anything unnatural at the time of birth, but where there was, however, a neurotic family history, and a history of alcoholism on the part of the father. These two factors might very well be taken into account in determining the actual cause of the condition in these latter cases, though not potent enough to produce premature birth.

This is the way in which I have been accustomed to look at these cases of cerebral diplegia with histories so different, but the cases which will be of most interest to the obstetrician are those where the condition is produced in presumably perfectly healthy children during parturition, and which in the hands of skilled obstetricians might sometimes be prevented.

Dr. Jardine said that meningeal hæmorrhage was frequent in forceps and breech cases. This had been noted at the *post-mortem* examinations in the Maternity Hospital. In one case of asphyxia neonatorum, following after version for prolapse of the cord, the child had convulsions and became imbecile, and in another case, where forceps was used owing to the size of the child delaying labour, this infant, also, developed imbecility.

Dr. Carstairs Douglas said it might be of interest if he narrated the case of a child of 18 months, which had been under his care with left-sided hemiplegia dating from birth. Delivery (which took place in another part of the country) had been by forceps. The child could neither creep nor walk, but could roll about. The fingers and toes were flexed. After waiting some months, as no improvement resulted from massage, &c., and as articulate speech was very defective, the patient was trephined over the right Rolandic area by *Dr. Renton*, and the dura opened. Nothing abnormal was found. Recovery from the operation was good, and some months later there was a good deal more power in the left side, particularly in the leg. Speech, also, was improved, showing that the centre in this case had been right-sided. After this the case was lost sight of.

IV.—DEEP DEPRESSION OF FRONTAL BONE IN NEW-BORN RELIEVED BY OPERATION.

By *DR. ROBERT JARDINE.*

The mother of the child was a small, rickety woman. She said that she did not walk until she was 7 years of age. Her

legs were not markedly deformed. The pelvic diameters were as follows:—Intercristal, $10\frac{1}{4}$ inches; interspinous, $9\frac{1}{2}$ inches; diagonal conjugate, 4 inches. The true conjugate would thus be about $3\frac{1}{4}$ inches. Her first child had been delivered by forceps. In this, her second confinement, the head had presented well-flexed, with the occiput towards the front and left. The head was partly moulded into, but had not passed, the brim. I gave chloroform, and Dr. Harrington, one of my residents, applied Milne Murray's axis-traction forceps. He had to use considerable traction force, and, as the head passed the promontory, we were both aware of a thud. The child soon cried, and seemed to suffer no inconvenience from the very marked depression of the left frontal bone, which is well seen in the drawing and cast I show you. I applied very firm pressure to the head, but failed to raise the depression. As the patient lived in a single room, and the surroundings were anything but sanitary, I decided to leave the child until the mother could accompany it to the hospital.

The mother made a normal recovery, and she and the child were admitted to the Maternity Hospital on 23rd August. The child was quite well, but the depression in the bone had not risen. On 24th August, after Dr. Lindsay had taken photographs and made a cast of half of the head, I reflected about an inch of the scalp from the back portion of the frontal bone, and made a small incision through the bone, about a quarter of an inch in front of the suture, then passed Macewen's periosteum elevator between the dura mater and the bone, and raised the depression. The incision was made away from the suture, because the dura mater is always adherent at the suture, and I wished to avoid cutting the dura. The bone was fairly hard, but I cut through it with a sharp-pointed bistoury. When I passed the elevator in, there was a gush of blood-stained serum. I was surprised at the amount of force required to raise the depressed bone. The wound in the scalp was closed with stitches.

The child stood the operation well, but took nearly as much chloroform as an adult. The scalp wound healed by first intention, and the child kept perfectly well.

It is surprising that so marked a depression caused no inconvenience, but if it had been left, the brain functions would sooner or later have become affected, and the child have developed into an idiot or an epileptic.

The most marked depression I have ever seen was in a case where there was no deformity of the pelvis. The abdomen was exceedingly pendulous, and delivery was effected with

high forceps. The child seemed perfectly well. The depression had lessened considerably by the time of dismissal. As to the final result, I cannot say, as I never saw the child again.

DR. ALEX. MACLENNAN showed a child where a cranial depression, produced during delivery, and involving a large part of the left frontal bone, had been reduced. The operation was undertaken when the child was $3\frac{1}{2}$ months old, as since birth there had been no alteration in the deformity by way of improvement. A short incision was made anteriorly to the coronal suture, and the bone was cut through at the same time. The dura was then stripped from the bone, and the depressed bone was systematically broken up by a strong periosteal elevator. A drainage-tube was allowed to remain between the dura and the bone for three days. The bony fragments composing the depression united in their new position, and the operation did not disturb the child in any way.

Dr. Munro Kerr referred to his method of treating cranial depression by antero-posterior or oblique compression of the skull. Latterly he had not been so successful in certain cases, and this was no doubt due to more advanced ossification. Compression should, however, be tried before deciding to operate. He considered that reduction of the cranial depressions by compression was likely to succeed if there was little ossification and no fracture, but if ossification were advanced and fracture had occurred, compression would fail.

V.—CASE OF MISTAKEN SEX.

BY DR. ROBERT JARDINE.

In hypospadias the genital organs of the male closely resemble those of the female, and if a careful examination is not made a mistake may easily arise, and a male may be actually registered as a female child. A case of this kind has recently come under my observation.

The child, a supposed female, when a fortnight old, was brought to me by the midwife who had attended at the birth, as it was tongue-tied. The midwife asked me to look at the genital organs, as they were larger than usual. I found that what the midwife and the mother had taken for somewhat enlarged female genital organs, were really a divided scrotum

with a testicle in each side. What they had taken for the vagina was merely a shallow depression. The penis resembled a somewhat broadened and enlarged clitoris. As the child had already been registered as a female, it was necessary to apply to the sheriff for a warrant to have the entry changed. In such cases it is rather awkward when the discovery of the true sex is not made until the age of puberty is reached. In this case it was fortunately made early. The midwife was a very competent woman, and had attended thousands of cases, both in connection with hospital and private work, and yet she was misled by the strong resemblance the organs had to those of a female.

In such cases it is of the utmost importance to definitely settle the question of sex, so a very careful examination should be made.

REVIEWS.

Handbook of Public Health. By JOHN ORR, M.D. Edinburgh: E. & S. Livingstone. 1901.

THIS little manual, which runs to 236 pages, is intended by the author, as is stated in the preface, to be a simple and handy text-book for medical students who are preparing for their examinations for degrees in medicine, the aim of the volume being to describe concisely those subjects in public health with which a medical student ought to be familiar as part of his mental equipment for the ordinary practice of medicine.

The sum of the information contained in the volume is comprehended under ten chapters, which deal with soil, air, water-supply, disposal of excreta and refuse, cemeteries and crematoria, dwelling-houses, hospitals and schools, communicable diseases, food and its relations to disease, vital statistics, and climate.

In the chapter on soil one is surprised, in the light of modern researches on malaria, to read "that the 'miasm' of malaria rises in the ground air;" and, at p. 8, that air-currents may convey malarial infection from a marshy district. We should have thought, in view of the mosquito-malaria doctrine, now established beyond doubt, that these statements would not be found in any modern text-book. The foregoing is the more

unexpected, too, since at p. 193 the author recognises the cause of malaria in mosquito-infection or inoculation, although even here he only speaks of the disease being "disseminated in many instances by mosquitoes." Indeed, it would appear as if the author considered insect-infection as only a subsidiary source of the disease, seeing that he reckons as other sources the miasm-laden air of marshes and water-supplies from marshy areas. These latter doctrines must be looked upon as not well-established, for although the disease is recognised to prevail in the proximity of marshes more than in other localities, the discoveries of Ross, Celli, and a host of other observers throughout the world have thrown an entirely new light upon the relationship of the two. We cannot help saying that this "miasm" theory receives quite an unwarrantable prominence in the book. Dealing with the diseases which may be connected with the soil, the author speaks of anthrax being one, where, for example, the body of an animal dead of that disease has been buried. This statement is evidently based upon the supposed results of the famous experiment of Pasteur. It is not so well known that Pasteur himself renounced the view that the spores of this disease could survive the process of efficient interment.

The chapter on air puts before the student the main facts; but we note that the author abides by the old formula for the composition of air, and leaves out of count the new elements of recent discovery. He repeats the statement that "the air in its course through the respiratory passages acquires from the mucous membrane a small but appreciable quantity of putrescible matter." This is a strongly debated point. The experiments of Haldane and Smith in this country, and of Billings, Mitchell, and Bergey in America, although they indicate quite the contrary, find no mention in the book.

The Wellsbach burner is more properly spelled *Welsbach*. In his reference to vitiation of air by manufactories, trades, &c., the author omits to make any mention of the vitiated air of mines and collieries which gives rise oftentimes to disastrous accidents, and the effects of which on the victims fall to be dealt with by the practitioner.

The author puts before his reader the main important points respecting water-supply with reference to sources, storage, distribution, characters of waters, and the relation of water to the production of disease. One, however, is surprised to learn that the usual mode of quantitative estimation of chlorine is to precipitate it with nitric acid and silver nitrate, and then to collect, dry, and weigh the precipitate; indeed, we can with

difficulty imagine a potable water being treated in this manner. Again, in the quantitative estimation of ammonia in water, the author states the strength of the standard ammonium chloride to be used to be such that 1 c.c. is equal to 0.1 mg.; perhaps it would have been better had it been said that the solution most commonly used is just ten times weaker than that given. We are constrained to say of this part that it is too meagrely treated.

In the section on disposal of sewage and refuse, the author repeats the heresy of the use of a D-trap with the pan-closet. This was never common in Scotland, although of common occurrence in England. And while attention is drawn to the wash-out closet, both by text and illustration, not a word is said of the wash-down form, nor of the advantages, if any, which the latter has over the former. The section on sewage-purification is not treated as fully as it might be, and cannot, in respect of bacterial methods, pretend to be abreast with the most modern methods.

The chapter on dwelling-houses, hospitals, and schools contains a good summary of the important facts respecting site, construction, and the superficial and cubic spaces which ought to be provided for patients in hospitals. The only form of ventilation upon which the author condescends as a good form or system for schools is Boyle's system, while the propulsion or plenum system is dismissed in about five lines. Surely more than this consideration ought to be given to a system which commands the support of many sanitarians, and which is in use in many of the large buildings in this country, since the student ought to be informed regarding different systems.

The chapter on communicable diseases is by far the best and most fully treated. The author gives an excellent synopsis of the salient facts concerning the principal infectious diseases, the general management of cases, prophylaxis, modes of disinfection, and the principles of immunity, but we think it a pity that the author should speak so indecisively regarding the law respecting the compulsory notification of the scheduled infectious diseases in such phrases as "cases of infectious disease, occurring in the practice of physicians, *should* at once be notified to the medical officer of health," since for *should* it would be more correct to read *must*.

Food in its relations to the production of disease and to its unfitness for human food forms a short but well-written chapter. The subject of vital statistics is dismissed in five pages. On this we remark only that it is a mistake to suppose for statistical purposes that the year is made up only of

fifty-two weeks, and that it is impossible to convey to the student, in such narrow compass as has been given to its consideration, a sufficiently practical knowledge of the subject.

Taking the book as a whole, we have arrived at the conclusion that while it may be deemed a good primer of public health, it does not reach the standard now required even for candidates for degrees and diplomas in medicine and surgery.

Manual of Bacteriology. By ROBERT MUIR, M.A., M.D., F.R.C.P. Ed., and JAMES RITCHIE, M.A., M.D., B.Sc. Third Edition. With 150 Illustrations. Edinburgh and London: Young J. Pentland. 1902.

A VERY few years have elapsed since the second edition of this well-known manual was reviewed in the pages of the *Glasgow Medical Journal*; but bacteriology, like electricity, advances so rapidly that new editions can scarcely come too often so long as they are faithfully brought up to date. The authors of the present work have revised the whole subject, and in order to incorporate the necessary new matter without unduly increasing the size of the book, have condensed some parts and omitted others, where more recent knowledge has made this justifiable. A new chapter has been added on the bacteriology of the air, earth, and water, and it goes without saying that the chapter on immunity has undergone important modifications. It gives us pleasure to recommend the new edition of this manual both to students and to practitioners.

Introduction à l'étude de la figure humaine. Par le DOCTEUR PAUL RICHER. Paris: Gaultier, Magnier et Cie.

THE present work is an introduction to a double series of volumes which are to deal with the human form from the scientific and from the artistic points of view. The first part is on science and the plastic arts. Chapter I teaches that there is no real antagonism between science and art. Both are advanced by three agencies: inventive genius, experimental observation, and persevering labour. Leonardo da Vinci was the most striking personification of the reunion of art and science. Both are personal, both make use of preceding discoveries, both owe much to technique.

In Chapter II it is pointed out that art aids science, as when the latter is illustrated by drawings and photographs.

Conversely science aids the execution of works of art. In Chapter III we are told how great artists, both ancient and modern, have recognised the importance to art of an exact knowledge of anatomy.

The second part is on the science of the nude. Chapter I treats of the proportions of the human body and the different canons that have been recognised. In Chapter II, on anatomy applied to art, we are told that the ancient Greeks, knowing nothing of anatomy, produced their masterpieces because their opportunities of studying the nude were much greater than ours, and because athletic pursuits bulked so largely in their lives. Chapter III is on artistic physiology, and treats of beauty in movement. Chapter IV is on instantaneous photography and the lessons it has taught us.

The third part of the volume is on scientific æsthetics, and contains chapters on the ideal in art, the problem of beauty, and science and conscience. In his conclusion the author declares that art and science are only two different manifestations of the same principle—truth. As it is impossible to put limits to the progress of science, so it is impossible to predict where art will stop.

We scarcely need to commend a work by a master like M. Richer.

Clinical Hæmatology: A Practical Guide to the Examination of the Blood with reference to Diagnosis. By JOHN C. DACOSTA, Jr., M.D. Containing Eight Full-page Coloured Plates, Three Charts, and Forty-eight other Illustrations. London: Rebman, Limited. 1902.

MANY sources of information are now available to those who wish to master the rudiments of hæmatology as a science and blood examination as an art. But the science has undergone so great an evolution in recent years that new text-books on the subject may be expected to appear for some time to come, for the number of good, comprehensive treatises is by no means too great.

The present work is divided into seven sections. The first treats of the various methods and instruments employed in examining the blood. We are glad to find that the author thinks so highly of Oliver's hæmoglobinometer. In Section II we have a discussion on the blood as a whole, including its physical properties and the various departures from the normal. Section III is on hæmoglobin, erythrocytes, blood

plaques, and hæmoconia. Section IV deals with the leucocytes. In Section V, the diseases of the blood are discussed; in Section VI, the anæmias of infancy and childhood; and, in Section VII, "general hæmatology," viz., the characters of the blood in the various ills that flesh is heir to.

The whole work strikes us as possessing a high order of merit. The coloured illustrations are admirable, and the tables are a useful feature. We know of no better manual on the subject.

A Manual of Practical Medical Electricity: The Röntgen Rays and Finsen Light. By DAWSON TURNER, B.A., M.D., F.R.C.P. Ed., M.R.C.P. Lond. Third Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1902.

TREATMENT by means of electrical and light rays has developed so fast within the past few years that we are glad to meet with a new edition of this excellent manual. The general arrangement of the work remains as in the last edition, but the matter is increased, the illustrations are more numerous, and, in Part VI, there are two additional chapters on *x*-rays and Finsen light. We heartily recommend this work to medical practitioners and students.

Clinical Lectures and Essays. By HOWARD MARSH, F.R.C.S. London: J. & A. Churchill. 1902.

MR. MARSH is one of the most attractive of our surgical writers, and is able to select interesting subjects as well as to give good accounts of them. The present papers have already appeared in the *Transactions of the Clinical Society of London*, *St. Bartholomew's Hospital Reports*, or elsewhere, and there is, therefore, no need to summarise them here. The volume contains twenty chapters, a considerable number of illustrations, and an index. Among the subjects discussed, the following may be mentioned:—Growth as an agent in producing and removing deformity, the etiology of mistakes in diagnosis, the immediate treatment of injuries to joints by massage and movement, the present uses of excision of the knee-joint, the pathology and clinical history of some rare forms of ankylosis, displacements and injuries of muscles and tendons, byways in the study of diseases of the spine, the

differential diagnosis of new growths and inflammatory enlargements of the bones, new growths imitating tuberculous disease of the joints and spine, the association of suppuration with malignant disease, senile tuberculosis, hæmophilia imitating tuberculous joint disease, and elimination of tubercle by suppuration.

We can heartily recommend a perusal of the volume as a means of enjoyment as well as of instruction.

An Introduction to Dermatology. By NORMAN WALKER, M.D., F.R.C.P. Ed. With Forty-three Full-page Plates, and Forty-seven Illustrations in the Text. Second Edition, Revised and Enlarged. Bristol: John Wright & Co. 1902.

WE congratulate Dr. Walker that a second edition of his book has been called for so soon. The first edition, it may be recalled, was described as being practically a reproduction of the lectures which the author had been delivering to his students for several years previously. He thinks the success of the first edition was due mainly to its simplicity and the absence of unnecessary details. There is much, no doubt, in this, but the book strikes us, in addition, as being of a very practical character, and this applies not only to treatment, but also to diagnosis.

Some peculiarities have attracted our attention, such as the spelling *trichophyton*. *Alopecia areata* is classified among infective inflammations, and so are ringworm and favus, while pityriasis versicolor is placed along with erythrasma in a special section under the heading of saprophytes. *Pediculosis corporis* comes under hæmorrhages among the anomalies of circulation, while *pediculosis capitis* and *pediculosis pubis* are reckoned as infective inflammations.

In spite of these minor points which might call for criticism, we can strongly recommend this volume, and we can well believe that it will prove very useful to students and practitioners.

Diseases of the Nose, Pharynx, and Ear. By HENRY GRADLE, M.D., Chicago. London: W. B. Saunders & Co. 1902.

DR. GRADLE includes in his volume the nose, the pharynx, and the ear, leaving the larynx severely alone, and thus adding to the variety of the specialist's book-shelf.

The book bears evidence of great care in its preparation,

including discriminating personal clinical observations as well as careful study of the work of his contemporaries. The result is a book of considerable practical value, which can be cordially recommended to those in search of a guide to the diagnosis, pathology, and treatment of diseases affecting the nose, pharynx, and ear.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

A Case of "True" Intestinal Sand.—The *Indian Medical Gazette* for July, 1902, contains a paper by Dr. Charles H. Bedford, Professor of Chemistry in the Medical College, Calcutta, in which he gives, in brief, the history of a case characterised as above, together with the result of his analysis of the deposit. He is indebted to Lieutenant-Colonel Peck, I.M.S., for the clinical facts, and for having the opportunity of examining a specimen of the intestinal sand passed by the patient. He also saw the patient several times in consultation with him. She was a European lady, about 44; there was a very marked history of gout, and she had had a number of "gouty deposits" in the smaller joints. Saline purgatives were frequently required for constipation. As a rule, the motions were normal in appearance, with the exception of the presence of mucus. There was no diarrhoea alternating with constipation. An attack of muco-colitis occurred coincidentally with the passage of the sand; it was not, however, severe. There was "no intestinal pain to speak of" at any time, and no history of vomiting or distension. "The tongue was always particularly clean." She had been always subject to ovarian pain, and was sterile; she had not reached the menopause.

A specimen of the urine, on being examined, was found to be brown and somewhat smoky in appearance, and to contain much suspended matter. A considerable amount of albumen was present, with a few fibrinous casts and uric acid crystals. A few months later the albumen had disappeared.

Her diet, when the intestinal sand was passed, had consisted of milk and farinaceous food for months before.

The treatment consisted in the administration of preparations of lithium, an occasional saline purgative, and colchicum and iodide of potassium in mixture.

The amount of sand passed at any one time did not exceed half a teaspoonful. It was very finely granular and yellowish-brown. Microscopic examination showed that the particles varied in shape and size—some were oblong, others irregularly oval, and others of different shapes. There was no appearance of vegetable or crystalline structure. The following is the result of the analysis given:—

" Moisture,	5.2 per cent.
Calcium phosphates,	28.68 "
Calcium carbonate,	5.20 "
Magnesium phosphate,	0.49 "
Organic matter,	60.45 "

"No traces of uric acid or urates were detected."

The quantity of sand that remained after making the analysis was too small to permit of an examination of the pigment being made.

The author states that his case agrees with M. Dieulafoy's series, inasmuch as it occurred in a gouty middle-aged woman.

Bunge has pointed out that the proportion of lime present in milk exceeds that to be found in an equal bulk of lime-water. This may serve to explain, to some extent, the large proportion of lime salts present in true intestinal sand in cases which have been for long almost exclusively on milk diet. The author goes on to say that, as the intestine is now known to be one of the main channels for the excretion of calcium salts from the system, and as the "chalk stone" deposits present in gout contain varying proportions of the phosphates and urate of calcium, in addition to their principal constituent, urate of sodium, true intestinal sand would seem to be closely related to gout. He is disposed to regard this condition as allied in some manner to the tophaceous deposits in other parts. Regarding the absence of uric acid and its compounds, the author says "it is easy to conjecture that the inorganic constituents of the sand are derivable from the milk diet and by excretion into the bowel from the system, and that, on the other hand, uric acid and its compounds are excreted by the kidneys, and, to a small extent, by the skin, and separate out in those tissues in which the blood-supply would appear to have a greater opportunity of depositing them than would be the case in the intestine." In conclusion, he says—"All we can at present say is that the condition would appear to be closely related to gout, and to be favoured by a milk diet."

The author refers to the paper by Sir Dyce Duckworth and Dr. A. Garrod, published in the *Transactions of the Royal Medical and Chirurgical Society of London* (vol. lxxxiv, 1901), which contains a very complete record of the literature of the subject, and a report of the discussion which followed. In the course of this discussion, Dr. Crombie stated that he had seen three cases during the ten years in which he had been superintendent of the European General Hospital, Calcutta, and that he thought it was more common in India than in this country.

Vide also Glasgow Medical Journal (vol. lv, p. 126)—"Samples of Intestinal Sand from Six Patients"—R. S. Thomson (*Transactions of the Pathological and Clinical Society*).

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

Syphilitic Ulceration of the Bladder.—In the September number of the *Glasgow Medical Journal* (Abstracts on "Surgery") attention is drawn to this subject, and a résumé given of a paper by Michel de Margouliès in the April issue of the *Annales des Maladies Organes Génito-urinaires* (Guyon and Lancereaux). Three cases coming under the personal observation of Margouliès are there cited.

At the sixth meeting of the Association Française d'Urologie, M. Le Fur detailed a case of this order. The following are the chief points of interest recorded regarding it:—

The patient was 32 years of age, who had never had gonorrhœa, but had had syphilis eight years before, and had taken little care of himself. Two years ago this patient had a severe attack of hæmaturia, soon followed by several others at irregular intervals. These attacks were unaccompanied by pain or any bladder symptoms. Some months ago he was sent to M. Le Fur by his own attendant, on account of a hæmaturia more profuse than the preceding one—an attack in which large clots in the bladder had caused retention of urine. Aspiration of the clots immediately stopped the hæmorrhage, but

the patient must certainly have lost a great deal of blood, judging by his absolutely decolorised mucous membranes.

Le Fur made a thorough examination of the urine; this was clouded, contained numerous blood-clots and leucocytes, but no microbe. The bladder was of normal capacity, and nothing could be felt abnormal in it; the prostate was exceedingly hard and irregularly bossed, presenting, especially in its right lobe, a nodule of considerable size and very firm consistence.

Although one might in this case think of a renal origin of the mischief, Le Fur attributed it rather to the prostate, in view of the clearly proved lesion of this gland, recognising that certain chronic forms of prostatitis have been taken for cases of pyelonephritis, on account of the hæmaturia, and especially for disorder of the urine due to renal disease, which may lead to it. The ordinary remedies recommended for the case, on the assumption that the condition was a chronic prostatitis, having no result, Le Fur made a cystoscopic examination, and made out, quite clearly, in the region of the trigone, a group of two or three ulcers, one of considerable depth, with punched-out edges and greyish base. Inferring from this an infection of the bladder resulting from the prostatitis, Le Fur began washing out the bladder regularly with nitrate of silver solution. No improvement resulted from this, the urine continued as muddy as ever, and from time to time there were passed in the stream purulent masses and little clots of blood.

Before these different methods of treatment were stopped, it occurred to Le Fur that possibly the mischief might be syphilitic, all the more so as there supervened a growth of mucous patches in the throat. Anti-syphilitic treatment was at once begun, and complete cure was rapidly brought about; the urine soon cleared up; blood disappeared entirely from the urine; the prostate became soft, and its nodules disappeared.

Cystoscopic examination, some time later, showed, in place of the former ulcers, whitish reticulated cicatrices.

Le Fur affirms, then, that it ought to be remembered that syphilis may, in spite of the prevalent view, lead to lesions of the urinary organs, notably the bladder and prostate. Its influence on urinary pathology is denied—in Le Fur's opinion, quite erroneously so. At all events, if one thinks of it enough, cases of syphilitic prostatitis are much more frequent than are generally believed, and specific treatment has now and then had the effect of causing certain intractable cases of "prostatitis," which had resisted all other forms of treatment, to clear up completely.

Moreover, when, with hard sclerosed nodules in the prostate, and muddy urine, there are clearly defined vesical hæmorrhages recurring at irregular intervals, and unaccompanied by any pain; if, by means of the cystoscope, one or more ulcers in the region of the trigone are discovered; and if ordinary methods of treatment fail to produce any effect on the cystitis—one may with very good reason think of the possibility of the affection being syphilitic in nature, and appropriate treatment ought at once to be instituted.

DISEASES OF CHILDREN.

By R. BARCLAY NESS, M.A., M.B., C.M.

Fœtal Endocarditis.—The abstracts immediately following are taken from an excellent treatise lately published, viz., *Manual of Antenatal Pathology and Hygiene*, by J. W. Ballantyne, M.D., and show the present position of this subject.

Fœtal endocarditis is a condition to which reference is so constantly made, more especially in connection with congenital cardiac anomalies and malformations, that it may be supposed that behind these multiple references must lie a number of well-ascertained facts. But this is very far from the truth.

From the neofœtal period on to the very end of antenatal life, the formation of the heart may be said to be in abeyance; it is nearly as well formed at the beginning of the second month of pregnancy as it is a day or two before birth. During this long period it grows in size and weight, and is very active in sending the blood round the circulation, but it develops scarcely at all; no great changes are seen in it, for all the great antenatal developmental processes have been completed before the end of the second month. . . . Therefore, it is extremely difficult to understand how endocarditis supervening between the second and ninth month can produce malformations which are evidently arrests of formative processes which are anterior to the first of these dates. On the other hand, it must be remembered that a part of the embryology of the heart is left until antenatal life is over, and is accomplished in the first days of postnatal existence. I refer to closure of the interauricular communication, and obliteration of the ductus arteriosus.

Now, let it be supposed that endocarditis attacks the heart at some time between the second month and the full term of antenatal life. The affection of the endocardium, it may be readily admitted, will so injure the vitality of the heart that after the infant is born there may be delay in the normal closure of the foramen ovale and the ductus arteriosus. In this way, it is quite conceivable, may be produced the ordinary form of congenital cardiac anomaly—a patent foramen and a pervious ductus.

Perhaps it may be necessary to admit that the endocarditis shall have specially attacked the margins of the foramen ovale and the walls of the ductus, but the assumption is not at all an improbable one. Sometimes, also, it may be supposed that the inflammatory process will lead to premature closure of the foramen or ductus. But it may be asked, is endocarditis, coming on in fetal life, not instrumental in producing any other of the malformations of the heart met with at birth? It is conceivable that it may interfere with the rate of growth of the various parts of the heart, although its supervention may be too late to interfere with their actual formation. In this way may be produced "congenital stenosis of the pulmonary artery and aorta." It is also conceivable that endocarditis coming on very early in fetal life may interfere with the normal completion of some of the last of the truly formative or embryogenetic parts of the development, and so lead, for instance, to persistence of the interventricular communication or to anomalies in the separation of the great vessels at the base of the heart. . . .

It must not be forgotten that there is another aspect of the relation of fetal endocarditis to cardiac malformations. It must be regarded as probable that inflammation will be more liable to attack a malformed than a well-formed heart. The presence of malformation will predispose to fetal endocarditis. . . . There are, therefore, two more or less opposed theories regarding congenital cardiac anomalies—the teratological and the pathological. According to the one, they are instances of "errors" in formation; according to the other, they are the results of fetal endocarditis. But the degree of opposition between these views has been exaggerated; indeed, the two theories are not incompatible. The structural defects and malformations and the signs of fetal endocarditis may have a common origin, and may exist side by side as evidence of a common cause which has begun to act in the embryonic period of antenatal life, and has not ceased to do so in the fetal period. . . .

It would appear that fetal endocarditis is relatively common if one accepts the evidence afforded by the presence of white or yellow thickenings on the endocardium, of contractions of the openings or cavities of the heart, and of pathological states of the valves. Theoretically, there is no cause to doubt the frequency of fetal endocarditis any more than that of antenatal hepatic cirrhosis; for if it be granted that these diseases are due most often to microbes, toxins, and poisons coming from the mother to the fetus through the placenta, then the two organs first reached by them will be the liver and the heart, and it is reasonable to look for lesions in these viscera. In this way fevers, tubercle, syphilis, alcoholism, and other morbid states in the mother, reaching the fetus through the umbilical vein, set up cardiac and

hepatic lesions in the latter. It is possible, also, that some cases of foetal endocarditis arise from bacilli and toxic products manufactured by and in the foetal organism itself. . . . Some of the cases, therefore, are really of the nature of transmitted maladies, while others are idiopathic. . . .

Foetal endocarditis stands out prominently among the other maladies of antenatal life, by reason of the fact that it has been diagnosed before birth (references to cases are given, p. 372). . . .

In estimating the value of the antenatal diagnosis of foetal heart murmurs, the possible fallacy of the uterine soufflé must not be forgotten. After the birth of the infant, the diagnosis of the state of the heart is made by the ordinary clinical methods. The cyanosis (early or late in appearing), the curious polycythemia or return of the blood to the foetal state as regards the number of the erythrocytes, the dyspnoea and palpitation, the hypothermy, the clubbing of the fingers, and the cardiac murmurs (usually systolic), all combine to form a clinical picture which is easily recognisable. It must be borne in mind that these signs and symptoms are mostly due, not to the endocarditis, but to its results or supposed results, the cardiac malformations. Difficulties arise when the attempt is made to diagnose the exact malformation or combination of malformations which are present in any case.

It is a noteworthy fact that congenital cardiac anomalies, and, therefore also, endocarditis (if we accept the inflammatory origin of some of these anomalies), are often associated with malformations of other parts of the body (references to cases are given). . . .

While little has been done towards the antenatal treatment of congenital cardiac anomalies, it is an interesting fact that apparently they are sometimes recovered from after birth.

In *Reports of the Society for the Study of Disease in Children* (vol. ii, 1902, London: J. & A. Churchill), there is a wealth of recorded clinical material. This is particularly true in regard to cardiac disease. Under **Congenital Heart Disease**, we have several cases recorded and discussed, two by Theodore Fisher, M.D., of Bristol, the first being a case of "Congenital Aortic Stenosis in a Child Aged Four Months" (p. 16), who died of bronchopneumonia. All the segments of the aortic valve were much thickened, and adherent to one another. This was accompanied by slight changes in the mitral valve, marked fibrosis of the muscular pillars, and marked hypertrophy of the left ventricle. The most interesting fact recorded in this case is that, three months before the birth of the child, which was small, but healthy, the mother suffered from severe pain in the left knee, evidently rheumatic. For several days she could only get about the house with great difficulty. The conclusion was drawn that foetal endocarditis of rheumatic origin had caused the lesion.

The second case was one of "Congenital Mitral Stenosis in a Child Aged Fifteen Months" (p. 13). The stenosis of the mitral orifice was not more than one-tenth of an inch across. The interest in this rare condition was still further increased by the fact that the stenosis was of a double character. There was a perforated diaphragm, which was attached to the upper part of the auricular surface of the mitral segments, and below the diaphragm the mitral segments and associated chordæ tendineæ were much thickened and contracted. The heart was hypertrophied, and weighed 4½ ounces. Although it is not clear how this membrane could have been produced, it seems probable that endocarditis led to some change in the relative positions of the portions of the segments which develop from the ventricular wall and from the endocardium, and it was the endocardial portion which has persisted as the diaphragm.

Dr. Sansom, who took part in the discussion that followed, emphasised the point that there ought to be a clear distinction drawn between congenital anomaly and congenital disease. Congenital mitral stenosis, as a congenital anomaly, was a myth, but, as the result of congenital disease, quite possible. He believed that intra-uterine endocarditis did exist, but it was rare. On the other hand, it was to be admitted that where congenital anomalies existed

in the heart, the heart was more prone to the ordinary changes found in rheumatism, viz., endocarditis.

Another case is recorded by Edmund Cautley, M.D. (p. 256), illustrating an uncommon form of congenital heart disease, namely, "Atresia of the Conus Pulmonalis and Patency of the Septum Ventriculorum without any Malformation of the Pulmonary Valves or Artery." This case gives additional support to the theory that many malformations of the heart are associated with, if not actually due to, congenital syphilis. Here there was ample evidence of this being present, a cause which would operate during the first few weeks of foetal life. For some reason, the conus pulmonalis was not properly formed, and, in consequence of the obstruction to the flow of blood, the septum ventriculorum was not completed. Such a malformation could hardly have been due to a foetal endocarditis, and would almost certainly be due to an error of development, the result, very probably, of the congenital syphilis.

From the symptoms present in this case, the diagnosis of congenital heart disease was comparatively easy, but to determine the exact lesion very difficult. Perhaps the most important sign was a well-marked soft systolic murmur, heard best over the pulmonary area, evidently due to the obstruction of blood through the narrow conus. The reasons against the murmur being caused by the patent septum ventriculorum are referred to, and are connected with the distribution of the murmur and the very smooth edges of the patent septum. Other notable features of the case were the absence of an extreme degree of cyanosis, and the prolongation of life for a year in spite of the great obstruction to the passage of blood to the lungs by way of the pulmonary artery.

It will be noticed above that Dr. Ballantyne, in dealing with foetal endocarditis, refers to the fact that cardiac anomalies are often associated with malformations of other parts of the body. I would therefore draw attention to the report of two such cases in the volume I have been dealing with.

Robert Hutchison, M.D., London, records a case (p. 22) showing "Multiple Congenital Abnormalities." The patient, a boy, aged 13 months, presented the following:—(1) Congenital heart disease; (2) a rudimentary hare-lip; (3) six digits on each hand; (4) shortening of the long bones of the extremities; and (5) defective development of the gums.

Another case (p. 25) is recorded by G. A. Sutherland, M.D., and Jackson Clarke, M.B., their patient, a boy, aged 2 years, presenting almost the very same abnormalities.

Reference can now only shortly be made to other interesting cardiac cases recorded in this volume of reports. A rare and interesting "Case of Pulmonary Regurgitation" in a girl, 15 years of age, is recorded by Dr. Cautley—a case which he believed started as a congenital pulmonary stenosis, and that later, as a result of rheumatism or some infective process, the valves had become affected by some form of endocarditis, this being limited to the pulmonary valves.

Harcourt Grevis, M.D., reports a "Case of Aortic Disease" in a boy, aged 9 years, with a history of rheumatism, and J. Porter Parkinson, M.D., the results of a *post-mortem* examination where "An Organised Intracardiac Thrombus" was found. At the junction of the auricular appendix with the right auricle, there could be seen a rounded mass the size of a walnut, which was attached by a short pedicle to the inferior part of the auricular wall; and close to it was a similar pedunculated mass the size of a pea. In the recent state these masses were hard, and apparently consisted of organised fibrin, except where there was a cavity filled with broken-down blood-clot. The surface of the masses was smooth and shining. Such cases of organised thrombi in the heart appear to be very rare, softer white coagula being much more common.

Another interesting case is by George Carpenter, M.D.—"A Case of Malignant Endocarditis," with hemiplegia and embolism of one iliac artery, which developed changes in the fundus oculi—optic papillitis, a simulated choroidal tubercle, subretinal hæmorrhages, and pigmentary disturbances.

Lastly, a reference must be made to a short, interesting paper by A. E. Sansom, M.D., entitled "Some Remarks on Heart Disease in Children," wherein he discusses some interesting points, not so much in connection with congenital heart disease as the more common forms grouped under the title of the rheumatic heart, including, first, the temporarily swollen or enlarged heart of rheumatism; second, the heart of rheumatic pericarditis; third, the heart of rheumatic endocarditis with ulcerating valvular disease, severe or extensive; fourth, the heart of slow, insidious endocarditis inducing mitral stenosis. The so-called remarks made on these lines are interesting, very suggestive, and worthy of perusal.

DISEASES OF THE EAR.

By WALKER DOWNIE, M.B., F.F.P.S.G.

On the Use of Hot Air in Eustachian Catheterisation (*The Laryngoscope*, September, 1902).—Dr. J. F. Oakes, of Chicago, describes the methods of applying hot air to the middle ear. The apparatus which he has used is that of Dr. W. K. Seelye, which, he says, is simpler in construction and less costly than that recommended by Dr. Enslee. The "Seelye heater" consists of a brass tube, around which is woven a coil of wire of high resistance. Outside of this coil is a packing of asbestos, all of which is encased in a nickel-plated brass tube. When connected to a lamp socket, heat is generated by the passage of the electric current through the high-resistance wire, and the inner brass tube becomes sufficiently hot to heat the compressed air in passing through it towards the ear. To prevent the silver catheter becoming uncomfortably hot, a non-metallic connection (spoken of as a "fiber tip") is introduced between the heater and the catheter.

Dr. Oakes has used this apparatus for two months, and, while he speaks favourably of the results obtained, he does so in a very brief and vague manner. "Observations," he says, "made in the treatment of a series of cases of chronic middle ear deafness discloses the fact that the improvement was more marked after each individual treatment with the 'heater,' and the progress towards recovery more rapid, and the results were in some cases brilliant. To be sure, much better results were obtained in the hypertrophic than in the hyperplastic cases, and yet it was noticeable that in a few cases, where the prognosis from a pathological standpoint was bad and treatment pronounced as hopeless, the patient declared that there was subjective improvement, especially in the relief of that usually distressing tinnitus." From this quotation, which contains the full clinical results embodied in his paper, one cannot, "in view of the difficulty of introducing superheated air into the middle ear cavity," be eager to either recommend or to adopt the use of hot air so applied as a therapeutic measure.

Necroses of the Osseous Labyrinth—Removal by Operation (*Journal of Laryngology*, March, 1902).—The patient whose case is here reported by Richard Lake, F.R.C.S., was a man, aged 54, who had had discharge from the left ear for fifty years, and, so far as he could remember, had always been deaf—practically absolutely deaf—on that side. For two weeks prior to seeing Mr. Lake, he suffered great pain in the region of the ear.

On examination, the meatus was occluded by swelling of the soft parts. The ear projected from the head, and the mastoid process was red and tender, and fluctuation was easily obtained. He was immediately admitted to hospital, where the abscess was incised and the radical operation performed. As the posterior wall was very thick, it was nearly entirely removed. Later, some portions of necrosed bone were discharged, and the meatus rapidly filled with granulations. The wound was opened, and the granulations scraped

away, and, as healing continued, the external meatus became obliterated. Six months later, the patient was shown before the Otological Society as a case of post-operative atresia of the meatus, and there was then no sign of any external meatus, and the wound over the mastoid was firmly healed. Three months later, he returned to hospital with a thin sanious discharge from a sinus behind the ear. There was slight pain, which continued to increase, and, a few days later, he had complete facial paralysis on the affected side. Operation was decided upon. When the ear had been turned forwards, a small sinus was found in the site of the external meatus, and the former opening in the bone was filled with compact bone. Following this sinus, the middle ear was reached, at the bottom of which was a small white point of necrosed bone, firmly fixed, to remove which the bone around was cut away. The necrosed bone, when being removed, got broken. The part first removed proved to be that part of the bony labyrinth which contains the external and superior semicircular canals and the vestibule, together with part of the internal auditory meatus. The second sequestrum consisted of the cochlea, and there was along with it the membranous cochlea. At the bottom of the wound, there were bluish membranous structures which Mr. Lake believed to be the remains of the membranous semicircular canals and vestibule, and which he did not remove. During the removal of the sequestra, the facial nerve was torn and could not be repaired.

A New Device for Syringing the Ear (*The Laryngoscope*, November, 1902).—Dr. Langstaff, of Brooklyn, has devised an "improvement on any appliance in use" for syringing the ear. The device is in two forms, one of which may be attached to a fountain syringe; the second may be connected directly to a piston syringe by a piece of rubber tubing. The apparatus consists of a middle-sized cylindrical ear speculum, along the roof of which is fixed a small metallic tube which, when connected to the syringe, conveys the stream of water along the upper wall on to the drum. The return current is caught near the outlet by a small gutter, and escapes through a tube connected with the floor of the speculum. There is a spring "cut off" encircling the rubber-tube between the syringe and the speculum to regulate the supply of water, and, when continuous irrigation is required, a small section of rubber tubing is placed around the tip of the speculum to prevent the water from escaping between the meatal wall and the speculum, and which is specially useful in irrigation of the ear while the patient is in the recumbent position.

The author claims for it efficiency and safety even in unskilled hands, and that its employment is painless and cleanly.

Books, Pamphlets, &c., Received.

- A Text-Book of Obstetrics for Students and Practitioners.** Edited by Richard C. Norris. With nearly 900 Illustrations. Second Edition, Revised. Two Vols. London: W. B. Saunders & Co. 1902. (35s. net.)
- Our Baby, for Mothers and Nurses,** Mrs. J. Langton Hewer. Eighth Edition, Revised. Thirtieth Thousand. Bristol: John Wright & Co. 1902. (1s. 6d.)
- Constipation,** by G. Sherman Bigg, F.R.C.S.E. London: Baillière, Tindall & Cox. 1902.

- Elements of Pharmacy, Materia Medica, and Therapeutics**, by Wm. Whittle, M.A., M.D. With Woodcuts. Eighth Edition. London: Henry Renshaw. 1903.
- The Edinburgh Medical Journal**, edited by G. A. Gibson, M.D., and Alexis Thomson, M.D. New Series, Vol. XII. Edinburgh: Young J. Pentland. 1902.
- Selected Papers on Operative and Clinical Surgery**, by the late William Stokes, M.D. Edited by William Taylor, B.A., M.B. With a Memoir of the Author by Alexander Ogston, M.D. London: Baillière, Tindall & Cox. (10s. net.)
- The Prize Essay on the Erection of a Sanatorium for the Treatment of Tuberculosis in England**, together with a Preface by the Chairman of His Majesty's Advisory Committee, a number of Appendices, Illustrative Plans, and a Bibliography by Arthur Latham, M.A., M.D.Oxon., M.A.Cantab., in association with A. Williams West. London: Baillière, Tindall & Cox. 1903. (5s. net.)
- The Story of Alchemy and the Beginning of Chemistry**, by M. M. Pattison Muir, M.A. With Seventeen Illustrations. London: George Newnes, Ltd. 1902. (1s.)
- Aids to Gynæcology**, by Alfred S. Gubb, M.D. Fourth Edition. Tenth Thousand. London: Baillière, Tindall & Cox. 1903. (2s. 6d.)
- Aids to Forensic Medicine and Toxicology**, by Wm. Murrell, M.D. Sixth Edition. Fourteenth Thousand. London: Baillière, Tindall & Cox. 1903. (2s. 6d.)
- Nothnagel's Encyclopædia of Practical Medicine** (Saunders' English Edition): Diseases of the Bronchi, Lungs, and Pleura, by Prof. Dr. Friedrich A. Hoffmann, Prof. Dr. O. Rosenbach, Dr. E. Aufrecht. Edited, with Additions, by John H. Musser, M.D. Authorized Translation. London: W. B. Saunders & Co. 1903.
- Medical Hints and Notes on Egypt as a Winter Resort**, by Arthur J. M. Bentley, M.D.
- Memoirs and Letters of Sir James Paget**, Edited by Stephen Paget, one of his sons. With a Portrait. Third Edition (Eighth Impression), with a Postscript by Sir Thomas Smith. London: Longmans, Green & Co. 1903. (6s. net.)
- Pharmacopœia of St. Thomas's Hospital**, by Edmund White, B.Sc. First Enlarged Edition. London: H. H. G. Grattan. 1902. (2s. 6d.)
- Bacteria in Daily Life**, by Mrs. Percy Frankland. London: Longmans, Green & Co. 1903. (5s. net.)
- The Mycology of the Mouth: A Text-Book of Oral Bacteria**, by Kenneth Weldon Goadby. With Illustrations. London: Longmans, Green & Co. 1903. (8s. 6d. net.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 17TH JANUARY, 1903.**

	WEEK ENDING			
	Dec. 27.	Jan. 3.	Jan 10.	Jan. 17.
Mean temperature, . . .	47·7°	38·6°	37·1°	27·1°
Mean range of temperature between day and night, . .	10·9°	11·1°	8·8°	12·2°
Number of days on which rain fell,	2	5	6	0
Amount of rainfall, . . ins.	0·10	1·63	0·92	0
Deaths registered,	343	352	370	383
Death-rates,	23·0	23·3	24·4	25·3
Zymotic death-rates, . . .	2·5	2·6	2·7	2·5
Pulmonary death-rates, . .	8·0	6·1	7·2	7·3
DEATHS—				
Under 1 year,	70	80	85	79
60 years and upwards, . .	66	65	84	90
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	2	...	2	...
Scarlet fever,	1	2	1	2
Diphtheria,	3	4	3	5
Whooping-cough,	16	26	17	23
Fever,	5	1	4	2
Diarrhœa,	11	7	14	6
Croup and laryngitis, . .	1	3	1	...
Bronchitis, pneumonia, and pleurisy,	104	89	74	84
CASES REPORTED—				
Small-pox, . . . . .	...	...	1	...
Diphtheria and membranous croup,	16	16	15	18
Erysipelas,	30	15	23	27
Scarlet fever,	40	31	42	40
Typhus fever,	1	...	...	...
Enteric fever,	12	23	25	11
Continued fever,
Puerperal fever,	3	4	2	3
Measles,*	56	29	48	76

* Measles not notifiable.

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ORIGINAL ARTICLES.

THE SIGNIFICANCE OF PAIN IN THE EAR.¹

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THERE are some diseases of the ear leading to deafness which, from the beginning to the end of their course, are not characterised by pain. Chronic dry catarrh of the middle ear, which comprises a large proportion of all cases of ear disease and causes marked dulness of hearing and distressing subjective noises, is generally painless. The patient may only complain of a sensation of fulness in the ears, or an indefinite feeling of discomfort, sometimes referred to the ears and sometimes to the back of the throat, which is probably due to a catarrh of the Eustachian tube, but unless there is an intercurrent otitis media, pain in the ear is not a symptom complained of.

Again, labyrinthine diseases leading to absolute dulness of hearing are, as a rule, painless. Still, when there is pain in the ear it is a valuable symptom, and it is the purpose of the present lecture to show its significance.

1. Pain in the ear may be due to morbid processes going on in the ear, or in parts immediately surrounding it. In this

¹ Lecture delivered at Anderson's College Medical School.

class, which includes the inflammatory affections, the pain seldom confines itself to the ear, but, starting from the ear, radiates over the side of the head.

2. Pain in the ear may arise from disease in parts not directly connected with the ear; in other words, it may be a reflected pain caused by disease of the teeth, tonsils, larynx, &c.

In the first group of cases we find pain in the ear associated with other aural symptoms, such as dulness of hearing, discharge of pus or blood from the ear, tinnitus, and giddiness or staggering. It is characteristic of this group that movements of the auricle and pressure on the auricle, or parts immediately surrounding it, aggravate the pain. The pain on pressure over the mastoid process in mastoid periostitis is characteristic. Again, in some cases you may elicit pain on pressure over the upper part of the posterior cervical triangle. In septic sinus thrombosis an abscess may present here, but even in cases of uncomplicated middle ear disease we may occasionally have an extreme degree of tenderness to palpation in this region. It will be remembered that the veins from the tympanum and the mastoid antrum and cells join the sigmoid sinus, which discharges its blood mainly into the jugular vein. But there are, as Sir William Macewen has pointed out, two other channels by which blood in the sigmoid sinus may reach the outer surface—by the mastoid vein and by the posterior condylar vein. If the sinus is plugged by septic clot, the infection may pass along the posterior condylar vein and involve the cellular tissue in the posterior triangle.

In affections of the ear characterised by pain, we should, before introducing an aural speculum, closely examine the ear and surrounding parts by direct or reflected light to see if there is evidence of any inflammatory process which would contra-indicate its use or make its employment a matter for extreme care.

In order that we may appreciate the significance of pain in the ear, I have thought it wise to review briefly those diseases of the ear characterised by pain.

Otitis media.—The commonest and most important of these affections is an acute inflammation of the mucous membrane lining the middle ear—an otitis media. By the term middle ear, we mean, not the tympanum only, but the Eustachian tube, tympanum, mastoid antrum, and mastoid cells. These

are all lined with mucous membrane, continuous with that of the nose and nasopharynx. In this way inflammatory conditions of the nose and nasopharynx may spread by continuity of surface along the Eustachian tube to the tympanum, mastoid antrum, and cells.

The inflammatory disturbance in the middle ear may be of various degrees, and the prominence of pain as a symptom will be correspondingly slight or marked. For instance, pain is not a conspicuous symptom, and may be absent, in mucous or sero-mucous catarrh of the middle ear, where there is a superficial inflammation of the mucous membrane. When, however, the inflammation is more severe, pain is the prominent symptom, and in the intensity of the pain we have a guide to the diagnosis, prognosis, and treatment. This form of inflammation is generally microbic, and originates in the fauces, pharynx, nasopharynx, or nose. It is the type of the recurrent earaches of childhood, and is of all degrees of severity up to that characteristic of acute purulent otitis media. Here the whole mucous membrane lining the middle ear is involved. An examination from the external auditory canal would show the tympanic membrane deeply injected, and, in the more severe cases, covered with white epithelial flakes.

In addition to pain, we have other symptoms denoting constitutional disturbance—pyrexia, sickness, and vomiting. In the earlier years of life, before the child can give utterance to its complaints in language, we have signs not difficult to interpret, namely, feverishness, restlessness, crying, rolling of the head from side to side, with the hand raised to the ear, and in some cases a convulsive seizure—symptoms which often give rise to a suspicion of brain mischief. The prominence of head symptoms in children can hardly be wondered at when we recall the anatomy of the temporal bone in the child—that along the roof of the middle ear in the earlier years of life there is a fissure (the petro-squamosal suture), in many cases not closed, so that the mucous membrane of the middle ear and the dura mater of the brain lie in direct contact. This fact will emphasise the importance of examining the ears in childhood when there are symptoms such as we have referred to.

The intensity of the pain as a guide to treatment has already been alluded to. If there is earache with a moderate degree of feverishness, and inspection by the external auditory canal shows the tympanic membrane injected, but not bulging, we might try the effect of gently inflating the middle ear with Politzer's bag, giving one or two grains of phenacetin according

to the age of the child—in adults giving the full dose, and, if necessary, placing in the external auditory canal a few drops of an 8 per cent or 10 per cent solution of cocaine. In the milder cases this will be successful, and the attack will be cut short. Afterwards, we can treat any morbid condition of the nose, pharynx, or nasopharynx. If there are hypertrophied tonsils or post-nasal adenoids let them be removed, and let whatever is necessary be done to place the nose and nasopharynx in a healthy condition.

In the severest types of earache, namely, those met with in scarlet fever, measles, influenza, &c., these measures will probably fail, the pain will continue, will be agonising; then we have to consider if we will incise the tympanic membrane. It is sometimes difficult to decide when the dividing line has been passed, but it will guide us, if we state as a rule, that when there is severe pain, temperature 100° F., or over it, with *bulging of the membrane*—when there is this triad of symptoms—incise the tympanic membrane, incise early and incise freely. If, in addition to those three symptoms, there should be pain on pressure over the mastoid process, it will only confirm us in our decision. Recent statistics have shown that the earlier the incision, the speedier and more certain is the cure. The following case is given as an illustration of the value of speedy incision of the tympanic membrane in acute inflammation of the middle ear.

A doctor's child, 15 months old, earlier on the same day on which I saw her, had symptoms pointing to severe pain in the ears—screaming, and constant rolling of the head, temperature 101·8° F. Examination showed both tympanic membranes deeply injected, and in the right ear bulging of the posterior segment of the membrane. Incision liberated some sero-purulent fluid, and gave speedy relief to the patient. On the fourth day the discharge had ceased, and by the fifth the membrane had healed.

The relief given to the patient by incision is marked. It is a safe operation, but should be done with every antiseptic precaution. In children it is more difficult to do, on account of the narrow canal being obstructed by the inflammatory œdema of the walls, which diminishes the lumen of the tube and gives the impression that the tympanic membrane is smaller in the child. On the contrary, in childhood the tympanic membrane is almost the full size of that found in the adult.

If the tympanic membrane is not incised, then one must wait till the inflammatory secretion forces its way through by rupturing the membrane. During this time the patient

suffers severe pain, and runs the risk of a purulent invasion of the labyrinth, with total loss of hearing; and, still worse, the extension to intracranial structures, with grave risk to life, for it must be remembered that in acute purulent cases there may be intracranial complications before the tympanic membrane ruptures.

The continuance or the recurrence of pain after incision or rupture of the tympanic membrane is a significant symptom, which almost tells its own story. For instance, the pain is not relieved after incision or rupture of the membrane. Then one would be inclined to suspect a localised periostitis of some part of the temporal bone, or continued severe pain with profuse purulent discharge and some degree of pyrexia, the probability is strong that we have a mastoid empyema—pus in the vertical cells of the mastoid—which urgently requires operative treatment.

Again, the pain is relieved for a time by rupture of the membrane, but recurs. If this is accompanied by the cessation of the discharge, it generally betokens that the perforation has become plugged in some way—by pus, by epithelial *débris*, or, it may be, by a heavy dusting of powder, such as boracic acid. A small perforation, with thick ropy discharge, often leads to persistence of pain, and points to the necessity for freely enlarging the opening in the tympanic membrane.

Furunculosis or Boils in the External Auditory Canal.—Here there is an intense but well-defined inflammation of the skin and subcutaneous tissue, said to be caused by the invasion of the ceruminous or sebaceous glands by the staphylococcus aureus or albus, but probably any local abrasion of the lining membrane of the canal may become infected by these organisms and give rise to a boil. It is sometimes associated with purulent middle ear mischief, with eczema of the auditory canal, or with ceruminous collections. Here the characteristic symptom is pain, which, starting from the ear, radiates over the side of the head, though it is noticed that the nearer the boil is to the outlet of the canal the less is the pain. Movements of the jaw, as in eating, or pressure over the auricle, aggravate the pain, while the introduction of an aural speculum for the purpose of examination will hardly be tolerated. With regard to other symptoms, there may be dulness of hearing; tinnitus, generally of a pulsating or beating character; and there may be a slight discharge from the ear. Of constitutional symptoms, a moderate degree of pyrexia is

common. The illness sets in abruptly with severe pain, runs a course of from three days to a week, the boil then discharges, affording the patient great relief.

Boils have a tendency to occur in crops. Recurrence of the pain would point to the formation of another boil. In some cases the furuncular inflammation extends through the fissures of Santorini in the floor of the canal or the gap in the roof of the canal, and involves the cellular tissue over the mastoid process, displacing the auricle downwards or downwards and forwards, simulating mastoid periostitis. The diagnosis rests on the objective examination, showing the characteristic swelling in the canal, with its extreme sensitiveness to touch with the probe.

Keratosis Obturans.—Ceruminous collections in the external auditory canal are generally free from pain; but there is a condition often mistaken for cerumen which is acutely painful—keratosis obturans—where there is a desquamative inflammation of the lining membrane of the auditory canal, leading to the formation of an epithelial plug. This plug, if kept free from moisture, may reach a large size and may be painless; but if moisture gets into the ear, the epithelial plug swells up, and the pain becomes intense. It is important, if possible, to make the diagnosis from ordinary masses of cerumen, for this reason, that we often apply some alkaline fluid to soften the ceruminous mass, and facilitate its removal by syringing. But if it is an epithelial plug, the ordinary alkaline solution merely swells the plug and increases the patient's misery. Inspection may help us in the diagnosis. Cerumen varies in colour from light yellow to dark brown, while these epithelial plugs are often white and glistening. In the absence of any definite lead from inspection, the presence of pain would decide us not to use alkaline fluids or drops of oil.

In the treatment of this desquamative condition, I have found rectified spirits of wine or equal parts of rectified spirits and glycerine to act well. It absorbs moisture from the plug, and facilitates its removal, though this is sometimes an extremely difficult matter. Syringing may fail to bring it away, and it may require to be removed with aural forceps. This should only be done under the most thorough illumination of the canal with the forehead mirror and the aural speculum. After removal, these plugs have a characteristic appearance—bright glistening scales (so different from masses of cerumen), and form a complete cast of the outer canal, while

examination often shows that the external auditory canal and the tympanic membrane have been stripped of their epithelial lining.

In *malignant disease of the ear* pain is the prominent symptom. The common type is that of an epithelioma of the outer ear, though cases of sarcoma of the outer and of the middle ear have also been reported.

CASE I: *Epithelioma*.—Woman, 50 years old, with history of deafness and discharge from the right ear of twelve years' duration. For a fortnight before coming under observation she had complained of severe pain in the ear. She also had attacks of giddiness. Watch, right, $\frac{9}{10}$. Inspection of the external auditory canal showed profuse discharge, and granulations of a greyish appearance, which were acutely painful to touch with the probe. A portion of the tumour was removed, and proved to be typical epithelioma.

CASE II: *Sarcoma*.—Girl, 6 years of age, came to the Ear Hospital with the history that eight weeks previously her mother noticed a small growth in the external auditory canal. The family medical attendant removed a small portion of this growth, and after this pain was persistent and severe. Facial paralysis set in seven days later, and persisted. There was no history of purulent discharge from the ear. Inspection showed a greyish-looking mass occupying the external meatus. It was exceedingly painful to touch, and with the probe was found adherent along the posterior wall of the canal. The tympanic membrane was gone, and the bone on the inner wall of the tympanum denuded of periosteum. Under chloroform the whole mass was curetted from the wall of the canal; but it soon recurred, and rapidly involved the mastoid region and the tissues in front of the ear. Sections of the growth showed spindle-celled sarcoma.

These malignant tumours of the ear, though rare, are interesting, and a point of practical importance lies in the diagnosis. As we know, sarcoma is apt to manifest itself in the earlier years of life, at a time when we often meet with polypi and granulations in the external auditory canal as the result of neglected purulent middle ear disease.

Excessive pain in granulations should always excite suspicion of malignant mischief, and lead to a microscopical examination of the tissue. If, in addition to pain, there is a rapid recurrence of the growth, with glandular involvement, we have a clinical picture which should make us careful as to diagnosis and prognosis.

There are other painful affections of the ear in addition to those already alluded to. *Foreign bodies in the ear*, if of a vegetable nature, may swell from the absorption of moisture and become painful. *Traumatic rupture of the tympanic membrane* is accompanied by great pain. Here the history of the accident and the objective examination would aid the diagnosis.

In eczema of the external auditory canal itching is the symptom mostly complained of, but occasionally in the *acute eczema of children* associated with purulent middle ear disease the sensation is that of pain. Inspection would show the abraded lining of the canal, with here and there the formation of crusts.

Acute purulent inflammation of the mastoid cells has already been referred to as an extremely painful affection in speaking of acute otitis media.

Mastoid periostitis is another intensely painful condition. It is generally secondary to purulent middle ear disease, and occurs more frequently in children than in adults, the presence of the squamo-mastoid fissure in children aiding the escape of pus to the surface of the bone. If the periostitis is over the mastoid behind the ear, it gives rise to the characteristic deformity, displacing the auricle downwards and forwards. Occasionally the bulging is on the postero-superior wall of the external auditory canal.

In *chronic suppuration of the middle ear*, pain may indicate an exacerbation of the inflammatory mischief. On the other hand, acute pain starting from the ear and radiating over the side of the head, occurring in the course of a chronic otitis media, may be the first symptom denoting an intracranial extension.

Reflex pain.—A patient complains of pain in the ear, and, by examination, we have excluded all the painful varieties of ear disease. There is nothing abnormal to be seen in the external auditory canal—the tympanic membrane appears healthy. There is no complaint of any other ear symptom—no dulness of hearing, no discharge from the ear, no tinnitus, nor is there pressure pain over the mastoid process. Then we consider the possibility of the pain being reflex in origin.

Perhaps a word of caution ought to be mentioned here. Examination may show a slight hyperæmia of the tympanic membrane, but inquiry will elicit the fact that the patient,

being convinced that the pain was due to ear mischief, had placed in the ear hot oil, hot laudanum, or hot spirits, causing a slight degree of hyperæmia of the tympanic membrane, but the want of proportion between the degree of hyperæmia and the intensity of the pain would incline us to seek for a cause elsewhere than in the ear.

Before discussing the subject further, let us look at the sensory nerve-supply to the ear. This will give us a better conception of the reflex mechanism, to which we assign the cause of the pain.

The outer canal has its main nerve-supply from the auriculo-temporal, a branch of the third division of the fifth, which provides the canal and the tympanic membrane with its sensitiveness. The vagus sends a branch—the auricular—to supply the posterior wall of the auditory canal. It is important to remember this connection with the pneumogastric, for it gives the key to the explanation, not only of pain in the ear from morbid processes in the track of the pneumogastric, but also the converse, namely, ear disease with symptoms referable to the pneumogastric—*e.g.*, cough from foreign bodies in the ear, &c.

The mucous membrane of the middle ear receives its nerve-supply from the tympanic plexus, which is situated over the promontory on the inner wall of the tympanum. This plexus is formed largely by Jacobson's nerve from the glossopharyngeal. It also receives branches from the sympathetic, which lies over the carotid artery in the carotid canal. It gives off the lesser superficial petrosal nerve to the otic ganglion, and in this way communicates with the inferior division of the fifth. A small branch unites the plexus with the great superficial petrosal, and so connects through the Vidian nerve and Meckel's ganglion with the second division of the fifth nerve.

The course of the chorda tympani across the tympanic cavity to the anterior part of the tongue need only be mentioned.

In diseases of the middle ear, and more especially where there are adhesive processes going on, the tympanic plexus may be involved, and occasionally the patient complains of neuralgic pains in the face—the pain being referred to the branches of the second and third division of the fifth nerve, which are connected with the tympanic plexus.

From this short sketch it will be evident how closely the ear is related to other parts of the organism—to the fifth

nerve which supplies sensory branches, to the whole of the face, and more especially to its third division, which gives off the inferior dental nerve to supply the teeth of the lower jaw. Through the auditory branch of the vagus the ear is connected with the tract of the pneumogastric; and through Jacobson's nerve from the glosso-pharyngeal, the ear is connected with the pharynx, tonsils, and tongue.

We can now enumerate some of the more common causes of reflected pain in the ear.

1. *Dental caries*.—Review the condition of the teeth, paying special attention to the second lower molar tooth on the corresponding side. Removal of a sensitive molar may put an abrupt stop to the symptoms.

CASE I.—L. W., 19 years old, complained of pain in the right ear for the last four years. During this time she was never an entire fortnight free from pain; often it occurred every night. The tympanic membrane appeared slightly thickened, but there was no evidence of any inflammatory mischief in the ear, tonsil, tongue, or larynx. The second lower molar on the right side was decayed, but not sensitive. She was advised to have the decayed molar removed. This was done, and at the time of writing, three months later, there has been no recurrence of the pain. She mentioned an interesting point, tending to confirm the diagnosis, that while the tooth was being extracted and for a short time afterwards she had excruciating pain in the ear.

CASE II.—M. M'K., æt. 21, complained of pain in the left ear, with slight dulness of hearing. The tympanic membrane was opaque and slightly indrawn, but there was no appearance of hyperæmia of the tympanic membrane, and nothing abnormal in the external auditory canal. The second lower molar on the left side was decayed and very sensitive. Since this tooth was extracted there has been no pain. Here the clinical picture was blurred by the complaint of dulness of hearing, which was due to old-standing catarrhal mischief in the middle ear, but the absence of any signs of active inflammation in the ear and the presence of a sensitive molar tooth determined the diagnosis, and gave the indications for treatment.

2. In *tonsillar and peri-tonsillar abscess* and in *ulcerations of the tonsil* (specific, tubercular, malignant) pain is often complained of, shooting up to the ear on the affected side, and more especially in the act of swallowing. In this case,

however, the throat symptoms are generally so marked as to compel attention.

3. *Ulcers on the pharyngeal wall and in the naso-pharynx* have frequently pain in the ear as a symptom. Their presence can be easily detected by means of the mirror and tongue-depressor, and, if necessary, by the use of the nasopharyngeal mirror.

4. *Affections of the base of the tongue.*—The foregoing sources of pain having been excluded, we examine the base of the tongue with the laryngoscope and laryngeal mirror. Gummatous or malignant disease in this region may have, as an early and prominent symptom, pain in the ear; indeed, it may be a symptom before the local affection is so marked as to direct attention to the part. We explain the pain in the ear when we remember that the glosso-pharyngeal nerve supplies both the posterior third of the tongue and also the mucous membrane of the middle ear (Jacobson's nerve to the tympanic plexus).

5. *Affections of the epiglottis and larynx.*—Ulcerations (malignant, specific, tubercular) in the larynx, and more especially if involving the epiglottis, may give rise to severe pain in the ear. This is probably due to the superior laryngeal nerve, a branch of the vagus reflecting the pain to the auditory branch of the vagus, which, as we have already noticed, is distributed to the posterior part of the external auditory canal.

To complete the sketch, a word may be said on *neuralgia of the mastoid*, which in this country is a rare affection. In some cases it seems to be pure neurosis, in others associated with old-standing catarrhal mischief in the middle ear. The leading clinical symptom is pain, which may be localised to the tip of the mastoid process, or generalised over the mastoid and external auditory canal. There is no evidence of any inflammatory disturbance in the parts—no redness, swelling, nor temperature. The treatment in intractable cases is free incision over the mastoid down to the bone.

ON OBSCURE PYÆMIA: WITH THE DESCRIPTION
OF A CASE WHICH ORIGINATED IN A GONOR-
RHŒAL URETHRITIS.

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WHEN pyæmia occurs as a sequel to traumatic suppuration, the result of an injury or operation, or in the puerperium, its source is usually readily localised, and the clinical recognition of the disease presents few difficulties.

In those cases in which, on the other hand, infection has developed without any apparent primary lesion, the diagnosis frequently becomes extremely uncertain, the character of several other morbid conditions being in many cases closely simulated.

Wagner¹ long ago stated that such cases of obscure pyæmia are probably more common than is generally supposed, but they are often not recognised in consequence of our ignorance of the symptomatology of the disease. The text-books contain little information as to this affection, and before proceeding to describe a case which I had the opportunity of observing, I shall briefly review the literature of the subject.

OBSCURE PYÆMIA.

Isolated cases of obscure pyæmia had been recorded by various writers, but the condition was first systematically investigated by Leube,² who, in place of the old name of spontaneous or idiopathic pyæmia, introduced the term "cryptogenetic," as expressing latency rather than spontaneity of onset. This observer recorded and classified the symptoms of five cases. The main features of the disease, as described by him, may be summarised as follows:—

1. The spleen is always enlarged.
2. Leucocytosis occurs in all cases.
3. The temperature is always raised, with a tendency to intermittency, exacerbations generally assuming the aspect of rigors. In the most acute cases—those terminating fatally in a few days—the pyrexia was, however, usually sustained, and

¹ *Deut. Archiv f. klin. Med.*, May, 1881.

² *Deut. Archiv f. klin. Med.*, October, 1878.

showed only slight remissions, the effect of medicinal agents. The disease always begins with a rigor, and in some cases this may be the only rigor noted throughout the course of the illness.

4. The respiratory frequency is always increased.

5. On the skin there are often seen eruptions of hæmorrhagic spots with yellow pustular centres, strikingly similar to the minute foci of suppuration found *post-mortem* in many organs.

6. Involvement of the joints, on which much stress is commonly laid, was in Leube's cases far less frequent than alterations in the skin.

7. The urine invariably contains albumen; in several cases the albuminuria was so marked that, when tube-casts were present, uræmia was thought of.

8. The nervous system participated markedly in the morbid process, as is evidenced by the somnolence, mental apathy, &c.¹

9. Retinal extravasations are occasionally present. In two cases a diagnosis of pyæmia could not be made during life with any degree of certainty. Uræmia, meningitis, acute rheumatism, miliary tuberculosis, enteric fever, and ulcerative endocarditis are instanced as the diseases from which it was particularly difficult to distinguish the condition; the clinical features of this condition and miliary tuberculosis are now and then absolutely identical, and distinction between it and malignant endocarditis is in some cases impossible.

Thoresen,² in 1880, recorded a series of twenty-two cases. This observer dwells more upon the obscurity of the primary infective focus than upon the clinical picture of the disease. Great stress is, however, laid upon the importance to diagnosis of the presence of marked muscular weakness out of all proportion to the duration of the illness; upon the rheumatoid pains in the large joints and long bones, with, frequently, an entire absence of objective changes; and upon the chills and rigors.

Wagner³ soon afterwards published an account of nineteen cases, his observations tallying in the main with those of Leube. Stress is laid upon the frequent occurrence of slight jaundice, and upon the fact that, whilst there are generally

¹ Barwell (*Med. Times and Gaz.*, 1869, vol. i, p. 397) had, many years before, drawn attention to the change of tone and manner to sullen moroseness and mental depression, which he believed to be an important and early sign of pyæmia.

² *Norsk. Mag. f. Lægevidensk.*, 1880.

³ *Loc. cit.*

severe subjective articular symptoms, organic changes are relatively rarely found to have occurred in the joints—a condition which does not appear to exist in other diseases. Whilst in Leube's cases the disease was always ushered in by rigors, and further marked rigors occurred in two cases, eleven of Wagner's cases had no rigors at all.¹ The presence or absence of rigors is not determined by the number of the metastases, for in one case where there were no rigors most of the organs were secondarily involved. The onset in most cases was sudden, although only one began with a definite rigor; chills and malaise were most frequently present. In three cases prodromal malaise existed for two or three weeks, but in most instances the subjective sensations from the first pointed to a severe illness. Like Leube, this writer found that those cases which ended fatally in a few days presented a continuous pyrexia, and that the temperature was lowered but slightly by the administration of quinine and the salicylates; for the rest, the pyrexia pursued an irregular course with exacerbations. Reference is made to the great difficulty in recognising many of these cases. In one-third of the number pyæmia was not diagnosed at all during life. The conditions for which it was mistaken were meningitis, acute rheumatism, enteric fever, ulcerative endocarditis, and small-pox; in one case a diagnosis was made of enteric fever existent along with acute rheumatism.

These are the only writers who have published and collated a considerable series of cases of obscure pyæmia. Numerous isolated cases have, however, been recorded.

Murchison,² in 1864, reported a case of pyæmia in which the early symptoms closely resembled enteric fever. There were no rigors, no jaundice, or skin lesions. Primary focus not discovered.

Sutton³ described a case which was admitted as an acute rheumatism. There were profuse sweats; no rigors; the urine contained no albumen in the earlier stages. The same writer refers also to two other cases of obscure pyæmia, one of which was not recognised during life.

Anstie⁴ reported a case which was at first thought to be rheumatic. On the third day a pustular eruption appeared,

¹ The Committee of the Pathological Society (*Trans. Path. Soc.*, vol. xxx) found that rigors occurred in all cases of pyæmia in which the suppurative focus was urethral in origin.

² *Med. Times and Gaz.*, 1864, vol. i, p. 307.

³ *Med. Times and Gaz.*, 1869, vol. ii, p. 347.

⁴ *Lancet*, 1870, vol. i, p. 117.

and a diagnosis of pyæmia could be made. No primary focus discovered either clinically or *post-mortem*.

Dowse¹ recorded two cases of so-called acute rheumatism, which eventually were found to be pyæmia.

Thompson² published an interesting case in which there were "flying" joint pains; no rigors; great weakness and drowsiness. *Post-mortem*, found to be a pyæmia.

In a case of obscure pyæmia recorded by Fergus,³ rigors and stupors were marked features of the illness.

Pel,⁴ in 1882, published an analysis of certain cases of obscure febrile disease in which sources of pyæmic infection could only be discovered on *post-mortem* examination. The temperature curve presented a quotidian pseudo-intermittent type, and was associated with an enlarged spleen and disturbed digestion. The diagnosis lay between occult pyæmia, ulcerative endocarditis, irregular typhoid fever, and syphilis.

An account of six cases, with a type of pyrexia somewhat similar to that of Pel's cases, was published later by Dreschfeld.⁵ The author considered the morbid condition present to be related to some pyæmic affection, such as pylophlebitis and ulcerative endocarditis.

Three cases of idiopathic pyæmia were recorded by Griffiths⁶ in 1886.

Graham⁷ reported a case simulating acute rheumatism. The joint pains were at first relieved by sodium salicylate. The patient did not seem to be acutely ill when first admitted. No primary focus of infection was discovered.

In a case reported by Phillips,⁸ the only alteration found in the blood consisted in a great diminution of the red blood corpuscles.

Boyd⁹ described a case of pyæmia in which the symptoms were like typhus in its pre-eruptive stage. The true nature of the case was not suspected till the *post-mortem* examination.

Lastly, a case of pyæmia, at first thought to be one of acute rheumatism, was reported in 1901 from the Barrack Hospital at Preston.¹⁰ The case was rapidly fatal; pyrexia was sustained and considerable.

From these cases we see that the diseases for which obscure

¹ *Ibid.*, 1874, vol. i, 463.

⁷ *Ibid.*, 1894, vol. i, p. 388.

² *Med. Times and Gaz.*, 1879, vol. i, p. 253.

⁸ *Brit. Med. Jour.*, 1895, vol. i, p. 1205.

³ *Lancet*, 1879, vol. i, p. 467.

⁹ *Trans. Roy. Acad. Med., Ireland*, 1897, vol. xv, p. 386.

⁴ *Zeitschr. f. klin. Med.*, 1882.

¹⁰ *Brit. Med. Jour.*, 1901, vol. i, p. 86.

⁵ *Owens Coll. Med. Chron.*, April, 1894, p. 4.

⁶ *Lancet*, 1886, vol. i, p. 1219.

pyæmia is most commonly mistaken are acute rheumatism, enteric fever, ulcerative endocarditis, meningitis, and uræmia; and, in some instances, the existence of a malarial condition, of typhus, syphilis, and small-pox have been suspected.

At the *post-mortem* examinations, there were found the signs of metastatic pyæmia.

Wagner was able to discover a source of primary infection in only 19 per cent of his cases, and in many of the other instances above referred to no source was found even *post-mortem*. In such cases, the disease was formerly held to have arisen idiopathically. Thus, in 1857, Wunderlich¹ reported five cases in which he believed the pyæmia to have developed spontaneously in the course of complete health. We now, of course, know that some original source of infection must always be present. The primary focus is often quite trivial, as is shown by cases reported by Kocher,² Chauffard and Raymond,³ Broke,⁴ M'Gregor-Robertson and M'Kendrick,⁵ and others, in which leechbites, slight ulcerative conditions, whitlows and boils, &c., formed the source of infection. Sometimes the source has been discovered in unexpected lesions, such as a foreign body in the appendix, caries of some bone, &c., &c., and, in the case which I am about to describe the disease appears undoubtedly to have originated in a gonorrhœal urethritis. Leube states that in one of his cases infection began in a double epididymitis, and Bose⁶ records a case in which the onset of symptoms was preceded by the formation and discharge into the rectum of a prostatic abscess. These lesions are so commonly the result of infection from the urethra that, in both cases, the possibility of the primary existence of a gonorrhœa as the original focus of disease is very strongly suggested. Cases have been of late years described in which an ordinary apparent pyæmia has followed upon gonorrhœa, but, with the possible exception of the instances referred to, I could discover no records of cases of obscure pyæmia in which the lesion after death was recognised as gonorrhœal in origin.

The subject of gonorrhœal pyæmia has only of recent years attracted much attention. It is of such importance in connection with the whole question of obscure pyæmia that it becomes of interest to consider briefly the present state of our knowledge of the subject.

¹ *Arch. f. physiol. Heilk.*, 1857.

² *Brit. Med. Jour.*, 1880, vol. ii.

³ *Arch. de méd. Expériment.*, May, 1896.

⁴ *Brit Med Jour*, 1897, vol. i.

⁵ *Practitioner*, May, 1899.

⁶ *Revue de Méd.*, August, 1894.

GONORRHOÆAL PYÆMIA.

As long ago as 1854, Coulson,¹ in a paper read before the Medical Society, stated that he considered all cases of abscess following upon gonorrhœal rheumatism to belong to the class of diseases in which there is suppuration of the joints from infection of the blood. J. R. Lane,² on the other hand, in 1877, expressed his concurrence with those who held that there existed no such thing as a special gonorrhœal poison. Until recent years, indeed, many observers believed the gonococcus to be a specific organism occurring only in gonorrhœa. All secondary lesions were ascribed to the accidental presence of the ordinary pyogenic cocci in the pus of gonorrhœal urethritis. Nowadays, however, the gonococcus has itself been conclusively shown to possess peculiar and widespread powers of pyogenic infection.

The first scientific evidence of the existence of a generalised gonorrhœal infection was offered in 1887 by Petrone,³ who found the gonococcus in the exudate in gonorrhœal arthritis, but was unable to confirm his observation by cultures of the organism. A few years afterwards, Hock,⁴ Neisser,⁵ &c., succeeded in obtaining pure cultures. Clement Lucas in 1899,⁶ in his admirable investigations into the causal relationship between the purulent ophthalmia and secondary arthritis of infants, also obtained pure cultures of the gonococcus from the joints. Hewes,⁷ Procheska,⁸ &c., were further able to grow cultures of gonococci from the blood itself in cases of gonorrhœal rheumatism. Martin,⁹ as long ago as 1882, had stated that he had found the micrococcus gonorrhœæ in the vegetations in cases of endocarditis following gonorrhœa, but cultures were not obtained, and the specimens not stained by Gram's method. As the result of the observations of Weichselbaum¹⁰ and others, who in post-gonorrhœal endocarditis found only the ordinary pyogenic organisms, the view generally held at this time was that the process was one of secondary or mixed infection. Von Leyden,¹¹ in 1893, first

¹ *Med. Times and Gaz.*, 1854, p. 436.

² *Lancet*, 1877, vol. i, p. 227.

³ *Centralbl. f. Chir.*, 1883.

⁴ Quoted by Tollmer and Macigne, *Fortschr. d. Med.*, 1894.

⁵ *Deut. Med. Wochenschr.*, 1894.

⁶ *Trans. Med.-Chir. Soc.*, 1899, vol. lxxxii.

⁷ *Bost. Med. and Surg. Journ.*, 1894.

⁸ *Virch. Arch.*, 1901, vol. clxiv, p. 492.

⁹ Quoted by Finger, Ghon and Schilagenhauser, *Arch. f. Dermat. u. Syph.*, vol. xxxiii.

¹⁰ *Centralbl. f. Bakt.*, 1887.

¹¹ *Deut. med. Wochenschr.*, Sept., 1893.

demonstrated the specific nature of the infection by the examination of microscopic sections of the vegetations, and Thayer and Blumer,¹ Welch,² and Hale White³ soon published cases confirming these observations. The question was not settled definitely, however, until Ghon and Schlagenhauser,⁴ Wassermann,⁵ &c., succeeded in growing cultures. Lenhartz⁶ further injected such cultures into the urethra of a human subject, producing a typical gonorrhœal urethritis. Harris and Johnston⁷ quite recently in a case of endocarditis grew cultures of the gonococcus not only from the vegetations, but also from the blood during life. The gonococcus was in 1893 also found in the heart muscle by Councilman⁸ and others, and, later, in the pericardium by Thayer and Lazear,⁹ Procheska,¹⁰ &c. It was found in the pleura by Thayer and Lazear,¹¹ &c.; in the lungs by Asahara,¹² and by Scholtz¹³ in the sputum in a case of pulmonary infarction. Cushing¹⁴ demonstrated its presence in the peritoneum; it was found by Young¹⁵ in the bladder; in the kidneys by Berg;¹⁶ and in the spleen by Harris and Dabney.¹⁷ Cary,¹⁸ Batut,¹⁹ &c., discovered the organism in cases of gonorrhœal phlebitis. Brewer²⁰ found it in the lymphatics and lymph glands, and Columbini²¹ in the parotid. Ahmann,²² Jundell,²³ &c., grew it from tendon sheaths, and Jacobi²⁴ and others have demonstrated its existence in bursæ. Jacquet,²⁵ and Finger, Ghon and Schlagenhauser²⁶ grew the organism from the periosteum: Ullmann²⁷ recorded the only case in which it has been found

¹ *Arch. de Méd.*, 1895, No. 7;
Bull. Johns Hopkins Hosp., 1896.

² *Med. News*, 1895.

³ *Lancet*, 1896, vol. i, p. 533.

⁴ *Wien. Med. Wochenschr.*, 1898.

⁵ *Münchn. Med. Wochenschr.*, 1901,
No. 8.

⁶ *Ibid.*, 1897, No. 47.

⁷ *Johns Hopkins Hosp. Bull.*,
Oct., 1902.

⁸ *Amer. Journ. Med. Sci.*, 1893,
vol. cvi, p. 277.

⁹ *Journ. of Experim. Med.*, 1899.

¹⁰ *Loc. cit.*

¹¹ *Loc. cit.*

¹² Quoted by Schneider, *Zeitschr.*
f. Heilk., Abth. *f. Chir.*, 1901, vol.
xxii, p. 270.

¹³ *Arch. f. Dermat. u. Syph.*, vol.
xlix.

¹⁴ *Bull. Johns Hopkins Hosp.*,
May, 1899.

¹⁵ *Journ. of Cutan. and Gen.-Ur.*
Dis., June, 1900.

¹⁶ *Med. Rec.*, April, 1899.

¹⁷ *Bull. Johns Hopkins Hosp.*,
March, 1901, vol. xii, p. 120.

¹⁸ *Med. News*, 1895.

¹⁹ *Gaz. Hebdom. de Méd. et Chir.*,
1900.

²⁰ *Morrow's Syst. Gen.-Ur. Dis.*,
vol. vi, p. 154.

²¹ *Centralbl. f. Bakt.*, 1898.

²² *Arch. f. Dermat. u. Syph.*, vol.
xxxix.

²³ *Ibid.*, p. 639.

²⁴ *IV. Congr. d. Deut. Dermat.*
Gesellsch., 1894.

²⁵ *An. de Dermat.*, 1892; *La Méd.*
Moderne, 1897.

²⁶ *Arch. f. Dermat. u. Syph.*, vol.
xxviii.

²⁷ *Wien. Med. Presse*, 1900, p. 2225.

in the bone itself. Bujwid,¹ Councilman,² &c., have reported its occurrence in muscle; and Meyer,³ Young,⁴ and others found it in the connective tissues. Raymond,⁵ Eliasberg,⁶ Dunn,⁷ Gielen,⁸ &c., have discovered the gonococcus in various metastatic eye conditions. Lastly, it has been demonstrated in nervous diseases by Von Leyden,⁹ Bloch,¹⁰ &c.; and in skin lesions by Buscka,¹¹ and Robinson.¹²

There is therefore hardly a tissue in the body in which the gonococcus has not been demonstrated.

It is not, however, always possible to find the organism in conditions of generalised gonorrhœal infection. Many explanations of this fact have been offered. According to some, it is because the bacteriological examination was undertaken too early. Thus, in the case of gonorrhœal arthritis, Touton¹³ found that the gonococcus is deposited in the first place in the tissues surrounding the joints, and only later enters the synovial sac;¹⁴ Stern¹⁵ obtained negative results for fluid drawn off from the joints at an early stage of the disease, whilst a second puncture undertaken later on gave positive results. According to others (Finger,¹⁶ &c.), it is because the examination is made too late, the pyrexia of the general infection having destroyed the gonococcus. Many cases having been recorded by Weichselbaum,¹⁷ Zeller,¹⁸ and others in which the common pyogenic organisms, but no gonococci, were found, some observers, as already mentioned, believe the whole condition to be simply one of secondary infection produced by the invasion of the general circulation by pyogenic organisms present in the urethra; others, again (*e.g.*, Foulerton,¹⁹ Bumm,²⁰ Moynihan,²¹ Barker,²² Pye Smith,²³ &c.),

tain in the case of the micrococcus of rheumatism, which is lodged at first in the areolar tissue immediately under the endothelium of the synovial membrane, and only later escapes into the cavity of the joint.

¹ *Centralbl. f. Bakt.*, 1895, vol. xviii, p. 435.

² *Loc. cit.*

³ *Centralbl. f. Chir.*, 1898.

⁴ *Loc. cit.*

⁵ *Gaz. d. Hôpitaux*, 1891.

⁶ Ref. in *Centralbl. f. Augenheilk.*, 1893.

⁷ *Brit. Med. Jour.*, 1895.

⁸ Ref. in *Centralbl. f. Augenheilk.*, 1896.

⁹ *Zeitschr. f. Klin. Med.*, 1892.

¹⁰ *Arch. f. Dermat. u. Syph.*, xlviii.

¹¹ *Ibid.*

¹² *Med. News*, 1896.

¹³ *Arch. f. Dermat. u. Syph.*, 1893.

¹⁴ A similar condition has been recently shown by Poynton and Paine (*Brit. Med. Jour.*, 1902, vol. ii) to ob-

¹⁵ *Wien. Med. Wochenschr.*, 1892.

¹⁶ *Die Blenorrhöe*, 4th ed., p. 278.

¹⁷ *Loc. cit.*

¹⁸ *Deut. Arch. f. Klin. Med.*, 1896, vol. cvii.

¹⁹ *Trans. Brit. Inst. of Prevent. Med.*, 1st ser., 1897.

²⁰ *Deut. Med. Wochenschr.*, Dec., 1897.

²¹ *Lancet*, 1899, vol. ii, p. 1349.

²² Report Med.-Chir. Soc., *ibid.*, vol. i, p. 230.

²³ *Ibid.*

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consider the process to be one of mixed infection by the gonorrhœal together with ordinary pyogenic microbes. According to Finger,¹ both forms are at first present in the metastases, but later on the gonococci may be supplanted by the pyogenic organisms. Some (Bond,² Jonathan Hutchinson,³ Wassermann,⁴ &c.) believe that the whole process of general infection is the result of intoxication due to the absorption of gonorrhœal poisons⁵ from the urethral tract. This is the view also of Ward,⁶ who, in addition, states that the toxæmia may be complicated by metastases of the gonococcus itself. Taylor⁷ suggests that all the above-mentioned factors are concerned in the process, namely, that generalised gonorrhœal infection is caused primarily by the gonococcus and its toxins, but is complicated and aggravated by the concurrent or subsequent action of pyogenic organisms. This view, which appears to be the most probable explanation of the morbid process, is also held by M'Cann,⁸ Balzer,⁹ and other recent observers.

Clinically, the only paper of any length dealing with the subject of gonorrhœal pyæmia is one by Post¹⁰ on "Deaths from Gonorrhœa." In all the cases collected by this writer, the process leading to the fatal issue appears to have been one of pyæmia following upon an abscess in the genital tract. Three other cases have been recorded by Dowse¹¹ and Moxon,¹² two by Hewett,¹³ Charteris,¹⁴ and Howard,¹⁵ one each by Classen,¹⁶ Jardine,¹⁷ Edington,¹⁸ and other observers.

The general course of the disease does not appear to differ clinically from that of pyæmia of common pyogenic origin.

The process of infection does not always go on to the formation of pyæmic metastases, as is shown by the instances of cases of gonorrhœal septicæmia recorded long ago by Bond,¹⁹ and more recently by Stewart,²⁰ Bonney,²¹ and others.

¹ *Wien. Klin. Wochenschr.*, 1896, p. 248.

² *Lancet*, 1872, vol. i, p. 395.

³ *Arch. of Surg.*, vol. vi, p. 94.

⁴ *Berl. Klin. Wochenschr.*, 1897, p. 685.

⁵ The existence of such poisons has been definitely demonstrated by de Christmas (*Ann. de l'Inst. Pasteur*, August, 1897) and other observers.

⁶ *Brit. Med. Jour.*, 1901, vol. i, p. 755.

⁷ *Venereal Diseases*, p. 262.

⁸ *Encyclopedia Med.*, vol. iv, p. 194.

⁹ *Wien. Med. Presse*, 1900, p. 1945.

¹⁰ *Bost. Med. and Surg. Journ.*, 1887, p. 417.

¹¹ *Lancet*, 1874, vol. i, p. 463.

¹² *Ibid.*, p. 415.

¹³ *Med. Times and Gaz.*, Jan., 1874.

¹⁴ *Brit. Med. Jour.*, 1876, vol. ii, p. 712.

¹⁵ *Lancet*, 1899, vol. ii, p. 1548.

¹⁶ *Albany Med. Ann.*, Mar., 1890.

¹⁷ *Brit. Med. Jour.*, 1900, vol. i, p. 1019.

¹⁸ *Lancet*, 1897, vol. i, p. 1542.

¹⁹ *Ibid.*, 1872, vol. i, p. 395.

²⁰ *Montreal Med. Jour.*, Mar., 1900.

²¹ *Lancet*, 1900, vol. i.

DESCRIPTION OF A CASE OF OBSCURE PYÆMIA OF
GONORRHOÆAL ORIGIN.

The subject of obscure pyæmia has of late years attracted considerable attention, but our knowledge of the disease is still incomplete. The morbid process involved does not readily lend itself to experimental investigation, and all clinical instances of its occurrence, therefore, seem worthy of record. The following case is of interest, not alone as a diagnostic problem, but because the origin of the infection appears to have been a gonorrhœa:—

J. H., æt. 42, labourer, was admitted to the Glasgow Royal Infirmary, under the care of Dr. Alexander Robertson, on 7th September, 1899, complaining of pain in the left knee and both shoulders; he brought with him a letter from his doctor, stating him to be suffering from rheumatic fever. The illness had begun three weeks before admission with malaise, pain and swelling of wrists and ankles, and a severe bout of diarrhœa lasting two days. No chills or rigors. A few days before admission the swelling and pain had shifted from the ankles and wrists to the shoulders and left knee. Had contracted a gonorrhœa three months before (this fact was only elicited on the fourth day in hospital), the discharge from which ceased two days before the commencement of the illness; no history of rheumatic fever or other illnesses. The patient was a man of intemperate habits, and stated that he had been out of work and badly fed for some months. Family history unimportant.

The patient was a well-knit man; pale, but did not look remarkably ill. Face and body covered with a profuse sour-smelling sweat. Tongue flabby and coated with a thick white fur; breath offensive. Skin over shoulders slightly reddened, and the shoulder-joints were swollen and very painful; considerable amount of fluid in left knee; nothing abnormal noted in the state of the wrists and ankles. Some impairment of percussion note at the posterior base of the left lung, with slight faintness of the respiratory murmur; no adventitious sounds; respirations, 27 per minute. The heart appeared healthy; pulse somewhat dicrotous, 98 per minute. Nothing abnormal in the urine. Slight general glandular enlargement present. The temperature on admission was 99° F.; towards evening it rose to 102·8°. Sodium salicylate was ordered in four-hourly doses of 20 gr. Joints less painful next morning and temperature normal, but by the evening the thermometer again registered 102·6°. On 9th September the temperature

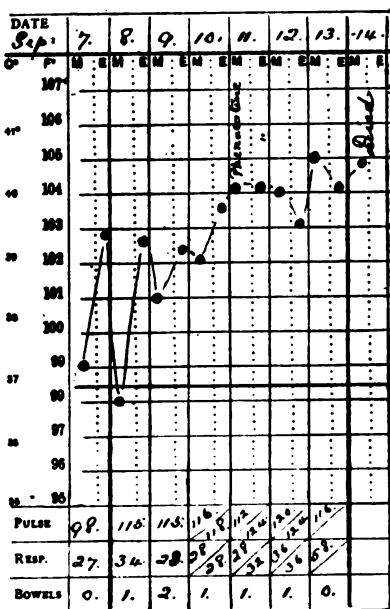
ranged from 101° to 102.4° ; pulse rate 115, and respirations 34 per minute; the patient appeared to be fairly comfortable; towards evening, the pulse being found to be somewhat feebler, the salicylate was ordered to be administered eight-hourly (instead of every four hours), and 5 minims of the tincture of digitalis were given with each dose. Next day the morning temperature registered 102.2° , and at night it rose to 103.6° . There was found to-day to be pain, with redness and swelling, of the right wrist. The left shoulder and left knee were still swollen, reddened, and very tender. The swelling and redness over the right shoulder, on the other hand, had disappeared. Pulse rate 118, and respirations 28. Sodium salicylate again administered four-hourly, with 5 minims thrice daily of the tincture of digitalis; tepid sponging every two hours. Traces of albumen noted in the urine to-day; no tube-casts.

On 11th September the temperature maintained a level of 102.4° throughout the day. Two doses of phenacetin (10 gr.) produced no appreciable reduction of pyrexia. Pulse and respiration rates, respectively, 116 and 28 in the morning, and 128 and 28 at night. To-day, for the first time, the history of a three months' old gonorrhœa was elicited; examination of the urethra revealed nothing abnormal. Salicylate treatment discontinued, bicarbonate of sodium and quinine being substituted for it. Free movement of the bowels at 4 A.M., the stools loose and dark, but not peasoup-like. Nothing abnormal detected in the abdomen.

The temperature on 12th September ranged from 103.2° to 104° . Patient now drowsy, and complained of headache. Small herpetic patch seen on upper lip. The tongue began to lose its white fur, and appear dry and brown. A slight cough, without much expectoration, was noted to-day. Respirations, 28 per minute in the morning and 32 at night. In addition to the changes at the left base behind, which had been present on admission, only a few bronchitic râles over the back were discovered on examination of the chest. Neither the pneumococcus nor tubercle bacilli could be demonstrated in the sputum. Pulse distinctly feebler (rate, 112 in the morning and 124 at night); brandy was ordered at regular intervals, and the bicarbonate of soda and quinine replaced by a mixture containing tincture of digitalis, ammonium carbonate, and sweet spirits of nitre. On examining the abdomen no eruption could be seen; no tympanitis, nor any pain on deep palpation. Spleen slightly enlarged. A Widal was performed, with negative results. Ophthalmoscopically,

nothing abnormal discovered in the optic fundi. An analysis of the blood gave the following results:—Hæmoglobin, 47 per cent; red corpuscles, 4,800,000; white corpuscles, 6,000 per c.cm. On inspection of a fresh specimen of blood under the microscope, there was found a noticeable increase in the fibrin formation, the rate of coagulation appearing to be somewhat delayed. Differential leucocyte count: Polymorphonuclear cells, 65 per cent; mononuclear cells, 33 per cent; and eosinophile cells, 2 per cent. No micro-organisms were found in the blood.

On 13th September the temperature ranged from 104.4° to 105° . Patient becoming gradually comatose. Considerable degree of dyspnœa existed to-day. Blood again examined, with results very similar to those of the previous day. Slight increase in the amount of albumen contained in the urine; no tube-casts. In the early morning patient complained of pain on micturition, but nothing could be found to account for this in connection with the external genitals. Death occurred at 10 A.M. on 14th September.



The following was found at the necropsy:—The pericardium contained a little clear fluid, and was apparently healthy. *Heart.*—The aortic and pulmonary cusps were competent, and appeared healthy. Circumference of mitral valve, 130 mm.; of tricuspid, 150 mm. Both ventricles considerably dilated, and the muscular tissue of the heart soft and pale. Left lung bound by old pleuritic adhesions to the diaphragm, and at the lower lobe to the chest wall. Both lungs healthy but for hypostatic congestion of the lower lobes. Spleen considerably enlarged and congested. Liver enlarged; presented healthy appearance. Kidneys large, and showed numerous small pyæmic abscesses in the cortex; both organs somewhat acutely

congested. Stomach and intestines apparently healthy. In removing the bladder, an abscess containing creamy pus, about the size of a hazel-nut, was found in the left lobe of the prostate. A large abscess was discovered in the muscular tissues, apparently connected with the glands of the groin on the right side, and another abscess found in the muscular tissues near the xyphoid cartilage. These abscesses appeared to be more recent than the prostatic abscess. The condition of the joints was not examined, permission for the sectio being restricted to the chest and abdomen. The pus from the prostate, groin, and abdominal wall was later found to contain the gonococcus.

REMARKS.

The case was at first thought to be one of acute rheumatism, and the early favourable effect of the salicylates seemed to confirm this view. This effect soon proved to be transient, and the possibility of gonorrhœal rheumatism was considered. The patient's communication in reference to the recent existence of a gonorrhœa was important in this connection.

The general state of the patient, however, grew so serious that the condition could clearly not be ascribed to a mere state of ordinary gonorrhœal rheumatism. It was thought that there must at least exist a generalised septic infection of the blood. Of this there could be found no evidence; the bacteriological examination had yielded no result, and the leucocyte count distinctly negatived the possibility of septic infection. Further, no rigors were known to have occurred throughout the course of the disease, and careful examination revealed no signs of localised suppuration in any part of the body.

The possibility of enteric fever was now considered. The enlargement of the spleen, the appearance of the tongue, the bronchitic signs, &c., were to some extent in favour of the diagnosis of typhoid. On the other hand, whilst too great importance was not attached to any of these, there were absent such positive signs as reaction to Widal, as the typical eruption, and as diarrhœa with characteristic stools. In addition, the existence of synovitis could not—at anyrate not readily—be explained by this diagnosis.

Opinion generally inclined to the view, then, that the case was one of generalised miliary tuberculosis. This diagnosis was borne out by the general symptoms, as well as by the blood count and the majority of the physical signs present. Against it were the facts of the non-discovery of the tubercle bacilli in the sputum, and the absence of fundal changes. The

sputum, however, was examined on only one occasion, and it is well known that choroidal and retinal changes are frequently not present in these cases. Involvement of the joints in generalised miliary tuberculosis is certainly uncommon, but an instance of this was reported by Laveran¹ in 1877, and quite recently Rolleston brought a similar case before the Clinical Society.²

The result of the necropsy was to show that the condition had, after all, been one of pyæmia, and the nature of the infective process was made clear by the discovery of the gonococcus in the pus taken from several of the abscesses found *post-mortem*. The urethral tract clearly formed the site of primary infection, as was evident both from the fact that the prostatic abscess appeared to be older than the other collections of pus, and from the localisation of those metastatic processes which occurred in the abdominal wall. The involvement of the kidneys is also a fact of some value in determining the primary focus, for, as was pointed out by Leube (*op. cit. supra*), there seems to exist in suppurative processes a pathological connection between the genital and renal organs, similar to that existing between these organs in tubercular infection. This is borne out, too, by the report of the Pathological Society.³ Of the cases fully described in the report, the kidneys are, in only 28 per cent of cases, noted as normal or not referred to at all. It is a matter of great regret that the condition of the joints could not be investigated *post-mortem*.

A somewhat remarkable feature of the case was the unsuspected presence of the prostatic abscess. In most instances, as is well known, this condition gives rise to severe pain with rectal and vesical tenesmus increased by defæcation and micturition. Beyond the complaint of pain on the day preceding death, none of these conditions existed. Pressure upon the perineum, which was exerted on several occasions in the search for a urethral discharge, elicited no sign of tenderness. White and Martin⁴ refer, however, to the occasional development of an abscess of the prostate in so quiet a manner as to escape observation until examination *per rectum* reveals a large fluctuating swelling. As a result, probably, of the short duration of the illness, and in the absence of signs which seemed to point to its necessity, a rectal examination was unfortunately not made.

¹ *Progrès Médical*, 1877.

³ *Trans. Path. Soc.*, vol. xxx.

² Rep. in *Lancet*, 17th January, 1903.

⁴ *Gen.-Ur. and Venereal Diseases*, p. 272.

Equally remarkable was the existence in the abdominal wall of abscesses, which were not detected clinically, in spite of frequent careful inspection and palpation. Instances have, however, been recorded which show that great anæsthesia in pyæmia is not uncommon. Thus, Fagge¹ quotes a case in which at the autopsy there was found extensive disease of the right femur and adjacent epiphysis, these lesions having been unsuspected during life, notwithstanding the fact that the patient was subjected to a considerable amount of manipulative interference in the employment of cold baths in the treatment.

The absence of rigors and the sustained character, latterly, of the temperature, constitute points of some interest in this case. Wagner,² however, has shown that rigors may be entirely absent in a large number of cases, and Leube³ found that in the acutest cases the pyrexia is usually continuous.

Lastly, the misleading results of the blood examination are worthy of notice. As was pointed out by Von Limbeck,⁴ the whole question of leucocytosis in suppuration is similar to that seen in pneumonia, and depends upon the intensity of the infection and the powers of resistance of the body. In this case, the absence of leucocytosis, and still more the absence of a relative increase in the number of the polymorphonuclear cells, must thus be ascribed to the great severity of the lesion, the intensity of the infection having overcome the powers of phagocytic resistance.

In conclusion, I wish to express my warm thanks to Dr. Robertson for permission to make use of the hospital records in compiling the clinical history of this case, and to Dr. Workman for granting me access to the account of the necropsy contained in the *post-mortem* journal.

¹ *Principles and Practice of Medicine*, third edition, vol. ii, p. 699.

² *Deut. Arch. f. klin. Med.*, May, 1881.

³ *Loc. cit.*

⁴ *Grundriss d. klin. Pathol. des Blutes*, Jena, 1896, p. 258.

CLINICAL CASES.

By W. WESTWOOD FYFE, M.B., C.M.

CASE I.—*Ascending myelitis in a young lad.*

I am persuaded to record this case of acute ascending myelitis for two reasons—(1) because of the extreme rarity of the disease, and (2) because of the patient's youth, and the difficulty in differentiating the case from Landry's paralysis.

Patient was a lad of 13, who was sent into hospital for "rheumatism," but complained chiefly of pain along the lower six ribs on the left side. The family history gave no indication of nervous diseases, and patient had always been healthy until the present illness began, which was nine weeks before admission, when he sprained himself very severely at football. He had also some indefinite pain in the legs three weeks before coming to hospital, and one week before this his parents noticed a thickness in his speech, and also that he was inclined to lean towards the left when walking, and complained of pain there. On examination when admitted, pain was chiefly felt over the six lower ribs. This was paroxysmal in character, and worse during night, and seemed to onlookers to be very severe.

There was a tumour in the region of the thyroid gland, extending from the cricoid cartilage, laterally, to between 2½ inches to 4 inches on each side. It had a firm consistency, yet some degree of fluctuation could be felt on each side. This tumour varied in size almost daily, and affected the breathing very appreciably. When large it measured 7 inches to 8 inches from side to side. Respiration was difficult and stertorous, patient having to sit up with head thrown forwards almost at right angles to the sternum. When the swelling was small it measured 4 inches; breathing was quite natural and easy. In addition there was a cystic tumour in the region of the right parotid gland, which, however, caused little or no pain, although it extended internally, and could be plainly seen through the mouth behind the fauces.

Three days after admission, the intercostal pain having somewhat abated, it was found that he could not walk without aid, or stand upright without suffering great pain in the back and legs. Percussion of the spine caused distinct pain at the level of the twelfth dorsal or first lumbar vertebra,

and this travelled down the legs as far as the knee in front and foot behind.

Reflexes—Ankle-clonus very decided; knee-jerk greatly exaggerated; abdominal and cremasteric easily seen. Four days later, voluntary power was entirely gone from the legs. No thickness of speech had been noticed since admission. Pain in the legs had become even more severe. The pupil of left eye was much larger than right, and did not respond to light. The mouth and side of face were paralysed on left side. Patient was very noisy and talkative during sleep. Next day the right pupil had diminished in size and was equal to the right; the left side of the face was completely paralysed; the tongue deviated to the right when protruded, which was done very slowly; the uvula pointed to the same side (right); the soft palate hung loosely over the back of the tongue. Fluids ran out of the mouth on the left side; there was no great difficulty in speaking; the lower lid of the left eye drooped slightly, and a choking sensation was felt after swallowing.

The arms began to show paresis two days later. Trembling and twitching all over became common. Ability to swallow disappeared next day, although patient still retained some voluntary power over the arms and hands. He became unable to close the eyes, gradually became weaker, and had retention of urine.

He died two weeks from admission.

CASE II.—Pointing Case of Empyema—Excision of Rib—Recovery.

Patient was a boy of 8 years, with a good family history. He had a severe attack of pleurisy four weeks before admission to hospital. His condition when admitted was very low, and on the right side of the chest, immediately below the level of the nipple and 2 inches to the right of the nipple line, there was a large swelling, about the size of an orange. This was painful, tense, and fluctuating. Cough was severe and continuous. On the same day an opening was made into the swelling, and a drainage-tube was inserted into the opening, which led into the chest cavity. A large quantity of badly-smelling pus was drained away, and this continued to flow freely through the tube for the next ten days, when, with the adjacent ribs closing together, it was seen that the tube was practically useless, and that pus was still collecting inside the pleural cavity. After the lapse of a fortnight from admission

it was decided to excise a piece of the rib, and drain, and this was accordingly done, although patient's condition previous to and during operation gave rise to grave doubts as to the result. His temperature had been high (103° to 103.5°), with excessive cough and expectoration of pus and blood. The pleural cavity was washed out twice a day. The temperature soon fell, and recovery became complete.

Obituary.

ALEXANDER THOMSON, M.D., L.F.P.S. GLASG.

As many of the readers of the *Glasgow Medical Journal* will be aware, the death of Dr. Thomson took place at his residence in Dumfries, on 18th January, at the age of 70. A few weeks before, he had suffered from an attack of influenza, but had apparently recovered and resumed his ordinary professional work, when he caught a chill on 14th January, which was followed by an acute pleurisy and signs of cardiac weakness, ending fatally after an illness of three days.

A native of the parish of Shotts, in Lanarkshire, Dr. Thomson studied medicine at Glasgow University, and after a distinguished career as a student, graduated as M.D. in 1859. The same year he became a licentiate of the Faculty of Physicians and Surgeons of Glasgow. During his student days he acted as a demonstrator of anatomy and class prosector for Dr. Allen Thomson, the then occupant of the chair. In 1858 he was appointed house surgeon to the Glasgow Royal Infirmary, which position he held for two years. He was also house surgeon to the Glasgow Lock Hospital for some time. About this date he was also elected President of the Glasgow University Medical Society.

In 1861 Dr. Thomson came to Dumfries, where he rapidly built up a large practice. Appointed visiting physician to the Dumfries and Galloway Royal Infirmary in 1872, he resigned two years later on a vacancy occurring in the surgical staff. He succeeded to the latter appointment, and held it till two years ago, when he resigned. The Directors accepted his resignation with regret, and embodied in a minute their appreciation of his valuable services to the institution for

the long period of thirty years. Besides his hospital appointment, he held various important public offices, acting as Medical Officer of Health for Dumfries Burgh for thirty-three years. For long he was surgeon to the Foresters and Oddfellows Lodges in the district.

As President of the Border Counties Branch of the British Medical Association in 1888, Dr. Thomson read a most interesting address on "The Evolution of Abdominal Surgery." In it he stated that in 1830 Professor Lizars, of Edinburgh, delivered a lecture to the local practitioners, on ovarian tumours, in the Board Room of the old Infirmary at Dumfries, and afterwards operated upon a supposed case. It, however, proved to be a pedunculated uterine fibroid, and was unsuccessful—the patient dying after the operation. This must have been one of the first cases ever operated on in Scotland. For many years subsequently the operation was condemned by even the boldest surgeons as unjustifiable, and fell into disuse till 1857 or 1858, when it began to be practised again. In February, 1864, under very unfavourable conditions in a cottage in the country, Dr. Thomson operated successfully on his first case of ovarian tumour. Dr. Thomas Keith had, two years before, begun to operate on these cases in Edinburgh, but Dr. Thomson's case was, if not the first, one of the earliest ever operated upon by a country surgeon in Scotland. It was followed at intervals by many ovariectomies and hysterectomies, with a large proportion of recoveries, till within a few months of his death. In the address he also related instances of the great reluctance shown by surgeons to open the abdomen at the time when he was a resident in the Glasgow Royal Infirmary.

Dr. Thomson was a keen sportsman and a first-class shot. His holidays were invariably spent on shooting expeditions, and nothing gave him greater pleasure than a week's shooting on a Highland moor.

By his death his fellow-practitioners in Dumfries and a large part of the south of Scotland have lost a friend and sagacious counsellor, on whom they could always rely. As a consultant in medical and surgical cases he was widely known and trusted, and his opinion was always highly valued, both in hospital and private practice. His great experience, sound judgment, and thorough knowledge of medicine and surgery, with his recognised dexterity in performing the most delicate and difficult operations, all combined to make him a consultant on whom patient and practitioner alike could place implicit confidence.

A funeral service was held in St. John's Church, Dumfries, on 22nd January, when the building was filled with friends and former patients, to pay him their last tribute of respect.

Dr. Thomson was twice married, and leaves a widow and two unmarried daughters to mourn his loss.

F. H. C.

CURRENT TOPICS.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION ("GLASGOW MEDICAL JOURNAL"): ANNUAL MEETING.—The Annual Meeting of the Association was held in the Faculty Hall, 242 St. Vincent Street, Glasgow, on Wednesday, 28th January, at 4:30 P.M. The President, Mr. Henry E. Clark, occupied the chair.

The minutes of last meeting were read and approved. The Treasurer, Dr. Geo. H. Edington, then submitted his annual report, which showed that the funds of the Association were in a satisfactory condition, and that an increase had taken place in the number of subscribers to the *Journal*. The Senior Editor, Dr. T. K. Monro, stated that there had been no lack of literary material, and that the *Journal* had appeared with fair regularity. In the course of the year, the Editors had appointed Dr. Arch. Young to edit the "Abstracts."

The meeting then proceeded to fill up the vacancies in the list of office-bearers.

OFFICE-BEARERS FOR 1903.

<i>President,</i>	. . . .	DR. ROBERT POLLOK.
<i>Vice-Presidents,</i>	. . . .	{ DR. W. K. HUNTER.
		{ DR. ALEC R. FERGUSON.
<i>Editors,</i>	. . . .	{ DR. THOMAS KIRKPATRICK MONRO.
		{ DR. GEORGE HENRY EDINGTON.
<i>Treasurer,</i>	. . . .	{ DR. GEORGE HENRY EDINGTON,
		{ 225 Bath Street.
<i>Secretary,</i>	. . . .	{ MR. JAMES GRANT ANDREW,
		{ 12 Woodside Terrace.
<i>Auditors,</i>	. . . .	{ DR. JOHN ROWAN.
		{ DR. WILLIAM WALLACE.

General Business Committee.

DR. JOHN M. COWAN.	DR. ARCH. YOUNG.
DR. JOHN ROWAN.	DR. CHAS. WORKMAN.
DR. WM. G. DUN.	DR. J. WYLLIE NICOL.
DR. P. S. BUCHANAN.	DR. JOHN W. FINDLAY.

GLASGOW NORTHERN MEDICAL SOCIETY.—The usual monthly meeting of the Society was held in the Shepherds' Hall, 25 Bath Street, on 3rd February—the President, Dr. J. S. Muir, in the chair. There was a fairly good attendance of members. Some important business was discussed, after which those present were asked each to write a question on pieces of paper. These were taken by ballot. The following three questions then received consideration:—

Question I (by Dr. Muir).—Does the hospital system of isolation in scarlet fever cases afford the protection to others that it is presumably meant to do, and is its compulsory nature satisfactory for the interests of the general public?

Question II (by Dr. Gray).—Should the sanitary authorities defray the expense of antidiphtheria serum, in cases of poor working people unable to pay, prior to the diagnosis being confirmed?

Question III (by Dr. Allan).—If any of the gentlemen present have as patients miners, tunnel workers, potters or other clay workers, will they kindly state whether they have had any reason to suspect the occurrence of cases of ankylostomiasis among them?

Dr. Spinks then drew the attention of the meeting to a communication he had received from an assurance company. The company had written Dr. Spinks, as an ordinary referee or friend of the candidate, to give information which was of such a nature as would be expected from an expert. There was no fee. One of the members explained that some assurance companies were advertising that there would be no medical examination, and then they sent to the candidate's physician a paper of questions to be answered, which amounted to an ordinary examination form, minus any fee for the information.

GLASGOW NORTHERN MEDICAL SOCIETY.—This Society held a smoking concert in the Alexandra Hotel on 10th February—Dr. A. T. Campbell in the chair. There were about seventy members and friends present. The programme consisted of songs, piano, and violin solos, musical sketches, humorous interludes, &c. The usual votes of thanks were given. This was the first meeting of a purely social character, and it is expected that it will be the beginning of a series of enjoyable evenings.

THE ROYAL ARMY MEDICAL CORPS (VOLUNTEERS) (GLASGOW COMPANIES) "ANNUAL," JANUARY, 1903.—We have pleasure

in calling attention to this admirably got up *Annual*, the second which has been issued. The fifty-two pages of text contain much that will interest members of the Corps and their friends, including numerous illustrations of an excellent character. The volume reflects great credit on those who have produced it, and very specially on the enterprising editor, Captain R. T. Halliday.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1902-1903.

MEETING I.—13TH OCTOBER, 1902.

The President, MR. A. E. MAYLARD, in the Chair.

THE VALUE OF REST AS EFFECTED BY OPERATION IN THE
TREATMENT OF CERTAIN DISEASES OF THE ALIMENTARY
CANAL.

BY MR. A. E. MAYLARD.

Mr. Maylard's paper will be found as an original article in our issue for November, 1902, at p. 321.

MEETING II.—10TH NOVEMBER, 1902.

The President, MR. A. E. MAYLARD, in the Chair.

I.—FRESH SPECIMENS.

Portions of an enormously enlarged liver, the seat of extensive cancerous dissemination, were shown. The organ weighed 21 lb. 8 oz. The primary tumour was a small ulcerated epithelioma, situated in the upper part of the sigmoid flexure.

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II.—PATIENT THE SUBJECT OF A PENETRATING INJURY OF THE EYEBALL, AS A RESULT OF WHICH THREE EYELASHES BECAME IMPRISONED IN THE AQUEOUS CHAMBER.

BY DR. A. MAITLAND RAMSAY.

A. M., æt. 12, a schoolboy, was sent by Dr. Love, of Kincardine-on-Forth, to consult me at the Ophthalmic Institution on 11th September, 1902. Four weeks previously, a companion, with whom he was playing, threw a broken jug against a wall, and a piece of the earthenware rebounded and struck the patient on the left eye. The upper lid was penetrated, the cornea beneath lacerated, the iris was prolapsed, and the lens injured. Immediately after the accident the eye was bathed, several eyelashes were removed from between the lips of the wound and from the conjunctival sac, the wound in the upper lid was stitched, and a compress and bandage were carefully applied. The accident was followed by very little pain, and by no acute inflammatory mischief. By the time the boy was brought to the Ophthalmic Institution the wounds in the eyelid and the cornea were firmly cicatrised, but the iris was adherent to the whole extent of the corneal cicatrix, through the outer extremity of which it had prolapsed. The pupil was dilated, but irregular in outline, the iris was congested, and the lens cataractous. The lenticular substance was swollen, and had pushed the iris forwards, so that the anterior chamber was shallow, and three cilia were seen imprisoned in the aqueous. Two of these eyelashes were large, and were embedded at their upper extremity in inflammatory exudation mixed with cataractous lens, while the third was small, and lay free on the surface of the iris at the outer and lower aspect of the corneo-iritic angle. On 17th September the patient was anæsthetised by chloroform, and an incision was made through the cornea from above. The two large cilia were caught by forceps and extracted from the aqueous, but the third could not be grasped without injuring the iris. It was removed, however, by irrigation, and at the same time the most of the cataractous lens was washed away. There was no escape of vitreous. On the day following this operation the iris became congested and the aqueous muddy, but there was no pain, and with the use of atropine and fomentations all signs of iritis passed away within forty-eight hours. On 27th September the eye had recovered so completely that the patient was allowed to go home. A band of capsule impregnated with inflammatory exudation passed straight

downwards behind the iris, and when the patient was seen again, three weeks afterwards, this had contracted and produced partial closure of the pupil. The boy was readmitted to the hospital, the cornea was again incised, and the constricting band was divided with De Wecker's scissors. The pupil immediately sprang open, and a bead of vitreous appeared within the lips of the corneal wound. No inflammatory reaction followed this operation, and with a +10 D S lens the vision was equal to $\frac{1}{12}$, and with a +15 D S ordinary sized print can be read.

The right eye is in all respects normal, and has never shown the slightest symptom of sympathetic mischief.

Dr. Ramsay also showed a patient in whom paraffin had been employed to overcome the deformity following complete enucleation of the eyeball. An artificial eye had been fitted over the paraffin mould, with the result that a very considerable amount of movement was permitted, the result being in every way satisfactory.

Dr. Renton said that both cases were of great interest. He thought that the impaction of eyelashes in the anterior chamber of the eye as the result of injury was a comparatively rare accident. He recalled the case of a gamekeeper in whom an eyelash had been driven into the anterior chamber as the result of a gun accident. He had removed it successfully, the sight being in no way impaired. He would like to hear from Dr. Ramsay as to the frequency or otherwise of this accident. With regard to the second case, whilst he had been employed as surgeon to the Eye Infirmary he had frequently performed enucleation after Mr. Mules' method, in which the ocular muscles are brought together over a little glass ball, and had found the results very satisfactory. He considered that, in some respects, paraffin might be inferior to the glass ball as originally used, and he would ask Dr. Ramsay if this method of operating had now been given up.

Dr. Ramsay, in reply, said that, with reference to the first point raised, he thought the accident must be a rare one. Indeed, this was the first case of the kind which had come under his own observation. With regard to Mr. Mules' operation, he had now given up its practice to a considerable extent, though he still practised it in what he considered suitable cases. He found that the operation was followed by forty-eight hours of extreme pain in the eye operated on, and that after the operation—it might be a considerable time

afterwards—the glass ball came out. He preferred enucleation, followed by the use of paraffin in all cases of deep seated inflammation of the eye, in which he was anxious to avoid all danger of sympathetic mischief.

III.—TWO PATIENTS ILLUSTRATING (A) RETRO-PHARYNGEAL ABSCESS OCCURRING AT ADVANCED AGE; (B) RETRO-PHARYNGEAL SWELLING SIMULATING ABSCESS DUE TO CALLUS FOLLOWING INJURY TO CERVICAL VERTEBRÆ.

By DR. WALKER DOWNIE.

The two cases which I venture to bring before you to-night are in many respects interesting as they are exceptional.

A. The first is Mrs. B., who is in the seventy-ninth year of her age. In May last she began to experience pain in her throat, accompanied by slight difficulty in swallowing. During the first few weeks the pain and difficulty did not exceed what might be described as discomfort, but after that time the difficulty increased more rapidly, and the pain became more severe. Early in June she consulted a doctor, who, considering the advanced age of the patient, the gradual onset of the symptoms, the increasing pain and difficulty in deglutition, and the loss of flesh and strength, came to the conclusion that the patient was suffering from malignant disease of the throat.

In August she was referred to my department at the Western Infirmary, where I saw her on the 22nd of that month. She was then weak and emaciated, and complained of her inability to appease her hunger on account of the pain and difficulty she had in swallowing.

Her tongue was foul, and her breath offensive. On examining the throat, the posterior pharyngeal wall was seen to bulge forwards and to lie in contact with the right half of the base of the tongue. No breach of surface was visible, and on palpation the swelling was found to be fluctuant.

She was taken into hospital, and on the following morning placed under chloroform, and the abscess freely opened. The quantity of pus was unusually great. After its evacuation the abscess cavity was scraped and swabbed out with carbolic solution, and the incision healed rapidly and satisfactorily, and now no evidence of the former swelling remains. She has regained her former health and strength, and local discomfort has entirely disappeared.

The abscess, I presume, was the result of suppuration of one of the retro-pharyngeal lymphatic glands.

B. The second case is Condry M'C., aged 41. He was in the army reserve, and two and a half years ago was called out to join the Scots Guards. While on his way to the Cape on board the transport ship *Britannia* he fell down the companion way, injuring his head and neck. From that time on he had difficulty in moving his head on account of pain and stiffness of the neck. While up country he had considerable pain in the neck, and on two occasions was sent to hospital. Later on he developed difficulty in breathing, particularly while asleep, along with some difficulty in swallowing.

In the middle of September, 1902, he came to the throat and nose department of the Western Infirmary complaining of difficulty of swallowing and attacks of suffocation while asleep, which symptoms were supposed to be due to the presence of a retro-pharyngeal abscess. On examining the buccal cavity, a large swelling of the posterior wall of the pharynx was, and still can be, seen. It begins at the level of the free border of the soft palate and extends downwards to the level of the cricoid cartilage. The bulk of the swelling is on the right side, and it projects so far forwards as to lie in contact with the base of the tongue. On palpation, it was found to be hard as bone, and to be practically a part of the vertebral column.

There had apparently been a fracture of the upper cervical vertebræ, and the resulting callus formation is seen as the large hard swelling.

An x-ray photograph was taken in the Western Infirmary, in the print of which the size, position, and relations of the swelling are clearly seen. In the print the swelling measures $\frac{1}{2}$ inches in length, and it projects forwards to the extent of $1\frac{1}{2}$ inch from the anterior aspect of the body of the third cervical vertebra.

IV.—CASE OF RUPTURE OF THE KIDNEY, WITH SPECIMEN.

BY DR. J. CRAWFORD RENTON.

J. D. was admitted into the Western Infirmary, having sustained a severe injury over the region of the right kidney. He was collapsed for two hours, but gradually recovered, and passed blood in his urine for several days. From the sixth to the ninth day he was so much improved that it seemed as if

he would recover without interference, the more so that his pulse and temperature were normal. On the tenth day he had a severe hæmorrhage with collapse, and consequently the right kidney was removed by posterior incision. It was found to be much lacerated, and almost split through at its middle point. He was so collapsed, in spite of subcutaneous injections of saline, that time was not taken to isolate the ureter and vessels, but the whole pedicle was clamped and tied, the clamp being left on in case of trouble. The cavity was packed with gauze, and he was removed to bed. He progressed favourably, and the clamp was removed on the fourth day. He was still passing some clots with his urine, which gave anxiety in case of some septic absorption; and, as the temperature went up to 104° F. on the sixteenth day, a suprapubic opening was made into his bladder, and the clots washed out with hot boracic solution. The temperature at once fell, and he is now convalescent.

The points of importance in this case are the sudden increase of hæmorrhage after it had improved, the great amount of laceration of the kidney, and the prompt improvement of the patient after the suprapubic opening of the bladder when septic infection had to a certain extent taken place. All these points are dwelt upon as of importance by Mr. Morris in his recent work on surgical injuries and diseases of the kidney. There is no doubt that the opening of the bladder in a case of this kind is of paramount importance, as where the clots are not dissolved by the urine they are exceedingly apt to become septic, and any washing out through the urethra may lead to a septic pyelitis and the death of the patient. We do not sufficiently often open the bladder in cases of chronic cystitis, as a direct washing out of that organ is of the greatest value in checking the progress of the disease.

V.—CARD SPECIMENS.

1. *By Dr. Henry Rutherford.*—(a) Specimen of ileo-cæcal intussusception in a child of 14 months, the apex of the vermiform appendix protruding from the neck of the intussusception.

(b) The colon at the seat of a colic intussusception (relieved by operation) from the same case.

2. *By Professor Muir.*—A specimen of ileo-cæcal intussusception from the Pathological Museum, Western Infirmary,

which presented an appearance closely comparable with that of the foregoing specimen (1a).

3. *By Dr. Joshua Ferguson.*—Casts of bronchi from a case of fibrinous bronchitis. The patient, a boy, had been ill for between four and five weeks. On three occasions during his illness he coughed up masses of white "stringy" material. This material on the first occasion was regarded by the patient's relatives as "vomited matter," and was not examined. On the two succeeding occasions, examination by Dr. Ferguson revealed its true character as fibrinous casts of several bronchi. The patient's temperature, which during the illness had ranged between 101° and 103°, rose to 105° just before the "casts" were expectorated. At these times, too, the respiratory murmur over the whole of one side of the chest became practically inaudible. Microscopically, the material consisted of laminated fibrin containing a few neutrophile leucocytes and a few micrococci. Eosinophile cells were not found, and diphtheria could also be excluded.

4. The following specimens, illustrating syphilitic lesions, were shown from the Museum of the Pathological Institute, Western Infirmary:—

- (a) Diffuse gummatous meningitis.
 - (b) Gumma of frontal lobe of brain.
 - (c) Gumma of cerebellum (shown on behalf of Dr. W. Semple Young, Helensburgh).
 - (d) Heart from a case of advanced syphilis with aortic valvular disease.
 - (e) Liver with gummata.
 - (f) Kidney showing changes due to waxy disease and cirrhosis.
 - (g) Liver with several large gummata.
- (Specimens (d), (e), (f) are from the same case.)

5. *By Dr. James Walker.*—Tuberculosis of the mammary gland (naked eye and microscopical preparations). The following statement was made by Dr. Walker:—

The specimen was the most recent of three cases of tuberculosis of the female mamma which had come under observation during the last twelve months in the Pathological Department of the Western Infirmary. The mamma showed to the naked eye many large caseous lymphatic glands, which were present throughout the entire breast. The microscopical examination revealed, in addition, that, so far as could be made out, the

glandular tissue proper of the organ was merely displaced, and not the seat of a tubercular process. This spread by the lymphatic trunks was the unusual feature of the case, and was probably of the nature of a backward spread into the mamma from a tubercular focus in its vicinity.

6. *By Dr. A. R. Ferguson.*—A calculus which had almost completely obstructed the penile portion of the urethra. The specimen had formed a complete cast of the penile portion of the urethra, which was considerably distended. The patient, a Santal native, had suffered from the calculus for a considerable period before being relieved by operation.

7. *By Dr. W. Semple Young (Helensburgh).*—Anencephalus with rachischisis in a foetus of $3\frac{1}{2}$ months.

8. *By Dr. J. Crawford Renton.*—A large myoma of the ovary.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1902-1903

MEETING III.—17TH DECEMBER, 1902.

The President, DR. J. NIGEL STARK, in the Chair.

DISCUSSION ON DIAGNOSIS AND TREATMENT OF MEDIUM DEGREES OF PELVIC DEFORMITY.

Dr. J. M. Munro Kerr opened the discussion by reading the following paper:—

I take it as a great honour to be asked to open a discussion on a subject of so much importance and interest as "The Diagnosis and Treatment of Moderate Degrees of Pelvic Deformity." I can also truthfully say that it is a very great pleasure, for I have long desired an opportunity of speaking at some length on a subject which has interested me so much in the work of the Glasgow Maternity Hospital. Seeing the difficulties the student of clinical midwifery has of measuring deformed pelvis, witnessing the results of erroneous treatment in many cases sent into the wards, and admitting fully to many mistakes and failures, I desire to take up the subject

very seriously. I also wish to consider it quite dispassionately, for I feel convinced great harm has resulted from a wholesale and reckless advocacy of a special treatment. Think of the warfare that goes on in the pages of the medical journals between the Cæsarean sectionists, symphysiotomists, inductionists, &c.

Our Council has very wisely, I think, included both diagnosis and treatment in the subject for discussion to-night. There is a great deal to be said on both divisions, but even more important than the facts elicited regarding each of them will be, I trust, a stronger conviction in the minds of all present of the necessity for greater accuracy in diagnosis, and of the all-important effect of the latter upon the treatment. The diagnosis of pelvic deformity is, speaking generally, too haphazard, with the result that treatment is unscientific and most unsatisfactory in its results.

Perhaps some may think that it would have been better, instead of the vague term "moderate degrees" of pelvic deformity, to have made use of one more exact. That, however, was impossible, and the expression, I think all who know anything of practical obstetrics will understand, for the subject of discussion is those cases where the pelvis has a conjugata vera round about 3 inches, and where there are several alternatives in the way of treatment.

DIAGNOSIS OF CONTRACTED PELVIS.

The diagnosis of a contracted pelvis is seldom difficult, and the greater the deformity the easier the diagnosis. If an examination is made at all carefully during pregnancy, the capacity of the bony canal is found to be smaller, and if during labour, the engagement and progress of the head downwards is, as a rule, found to be disturbed. The only cases in which it is excusable to overlook a pelvic deformity are when the malformation is very slight, and, fortunately, in them little harm is done by such an oversight.

But while it is not difficult to recognise a deformity of the pelvis, it is a matter of very great difficulty to appreciate the exact degree and nature of the malformation. The reason for this is that the means at our disposal for measuring and estimating the pelvic capacity in the living subject are so defective. Neither by our hands nor by pelvimeters can we accurately measure the pelvis. There are three methods for measuring the pelvis manually. These are the taking the oblique conjugate, the introducing the whole hand into the

vagina, and the method of Ramsbotham with the separated fingers. Of these the first two mentioned are the best. By neither of them, however, no matter how much care is taken, can a measurement exact to within one quarter inch be arrived at. This I say without the slightest fear of contradiction, for I have seen measurements most carefully made on the living subject wrong to one quarter and one half of an inch in unfortunate cases where the patients died and were examined *post-mortem*.

With pelvimeters results but little better are obtained. Even the most modern instruments of Skutsch or Falk, which I show you, cannot be trusted to give results much better than the hands.

But even although we could measure the pelvis accurately, and this to me is always a source of great comfort, we would be met by the second difficulty—the variability of the child's head as regards size and consistency. Now, if it is difficult to measure correctly the pelvis, it is much more difficult to measure the foetal head. After a great deal of practice in palpation a pretty good idea can be formed as to whether the child's head is large or small in cases where one can grasp the head through the abdominal wall. Beyond that, however, we cannot go, and the céphalomètres devised by Perret or Budin—although I must admit to never having tried them, having always employed calipers—do not seem to promise to make it more simple. The difficulty in getting exactly the desired diameter of the head, the impossibility of measuring the biparietal diameter, and the variability in the consistency of the abdominal wall and uterine wall, need only be mentioned as the most important factors that disturb the calculation. Again, therefore, we must admit that, as in the case of the pelvis, an accurate measurement of the foetal head is not possible.

Now, how far has this defectiveness in the methods of examination a real and practical effect on the treatment of cases of contracted pelvis? Well, I venture to say that it has little effect in the management of contracted pelvis when the deformity is only slight and when it is very marked, because forceps in the one and Cæsarean section or, if the child is dead, craniotomy in the other are our only alternatives. If, however, we have to deal with medium degrees of pelvic deformity, the class of cases more directly under consideration to-night, the shortcomings of our methods of examination must, I think, be admitted to handicap us very considerably in arriving at the most suitable treatment in particular cases.

But besides measuring the pelvis and foetal head, there is another method of arriving at the most suitable treatment. If you think of it, what really concerns us in practice is, in particular cases, the relative size of pelvis and foetal head. And what we should really ask ourselves, and what I always try to ask myself, in cases of moderate pelvic deformity, is, how does the foetal head fit the maternal pelvis? Barbour put this very neatly when he said, "The foetal head is the best pelvimeter." The obstetrician who first seriously tried to estimate the relative size of foetal head and maternal pelvis, and let that influence his treatment, was Müller. This he did

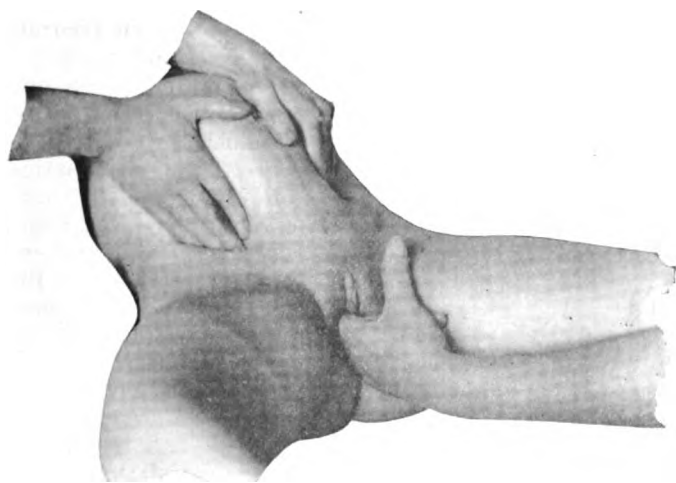


FIG. 1.
Müller's method.

more particularly in connection with induction of premature labour, for he said labour should be induced when the foetal head can, with a little difficulty, be pushed through the pelvic brim.

Since Müller's suggestion, an estimate of the relative size of head and pelvis is now made not only in connection with induction of labour, but also in helping us to decide on such operations as forceps, version, and symphysiotomy.

To carry out the manœuvre as recommended by Müller, an assistant presses the head down into the pelvis, while the operator with one or two fingers in the vagina feels how it

engages (Fig. 1, p. 203). Now, I have tried this method repeatedly for estimating the relative size of head and pelvis, and been often disappointed with the results obtained, for while one can appreciate readily when the head can be pushed past the brim, if it sticks at the brim it is impossible to estimate from an internal examination alone what proportion of the surface of the head is beyond it.

But besides Müller's method, others have been suggested, and Pinard tests the relative size of head and pelvis by purely external manipulations. Pinard's method is very simple. The fingers of one hand, which estimates the engagement of

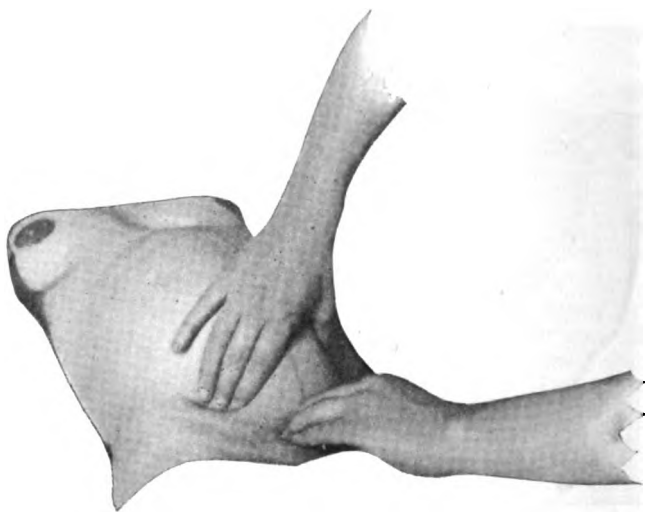


FIG. 2.

Pinard's method.

the head, are pressed over the brim at the symphysis, while with the other hand the head is pressed into the brim (Fig. 2). One can, as a rule, from it arrive at a pretty accurate estimate of the condition of head and pelvis. Personally, I have obtained the best results by employing the following method.

It is a bimanual method and requires no assistant to press down the head into the pelvis. With the right hand one takes the Pawlic grip of the head and presses it into the pelvis, while with the two fingers of the left, introduced into the vagina, one feels how the head engages, and at the same time with

the thumb one feels all along the brim and estimates the degree of overlapping (Fig. 3). I have been able with this method to estimate with very great accuracy whether or not a head will pass through, and the degree of traction, &c., that is likely to be required. One can appreciate, also, by such an examination, the consistency of the head, and one can move the head about at the brim with great ease, and often



FIG. 3.
Author's method.

with great advantage, for one can test the fore and back part separately. Many think, and not a few have said to me, that this estimating the relative size of head and pelvis is a matter of difficulty. Now, I do not think that it is so, and the more I resort to the method I have described for examining cases of medium deformity, the more convinced do I become that it is not difficult, and that it is often the only way to arrive at the proper treatment.

There are two objections to the proceeding. The one is that to carry it out really satisfactorily an anæsthetic is necessary, and the other is that in not a few cases the presentation is not a cranial but a breech. As regards the first, I quite agree that, as a rule, it is desirable once at least to anæsthetise the patient. If, however, this has been done, subsequent examination can be carried out often without an anæsthetic, and in not a few cases I have found it unnecessary even to make one examination under anæsthesia. But even admitting the necessity of an anæsthetic, surely that is a small disadvantage compared to the valuable information obtained. In such cases I have never seen any patient suffer from the anæsthetic, nor premature labour set up either by the manipulation or by the chloroform sickness.

The other objection, that the method is not available in breech cases, falls to the ground if one carries out the simple manœuvre of external version. I have repeatedly carried this out, and always with very little difficulty if the pregnancy has not extended beyond the thirty-sixth week. At full time I must admit to having sometimes failed.

Now, what I have said so far as regards the diagnosis of moderate degrees of pelvic deformity is applicable both in the later days or weeks of pregnancy and during labour. It must be remembered, however, that in a certain number of cases, even if one sees them during pregnancy, a conclusion as regards treatment cannot be come to until labour has progressed some little way. I think I can make this much clearer by giving an example. A poorly-nourished rachitic dwarf was recently admitted to the Maternity Hospital in labour. As the case was one of special interest I showed her to the students who were going round the wards with me. Her obstetric history was very interesting, for although she had a C.V. of only $3\frac{1}{2}$ inches, all her children, with the exception of the first, were born without any operative interference. She had been in hospital under my care at her last confinement. In her first labour, which was the only one in which the child had not survived, labour was induced about the thirty-fifth week on account of the pelvic deformity. When one examined the patient it was found that everything was in favour of, if not a spontaneous labour, at least a labour that would be terminated by only a little traction with the forceps, for the presentation was an anterior parietal one; the head was not large nor unduly ossified, and the occiput was towards the roomy side of the pelvis. I told the students this, and was able to inform them next day of the correctness

of the prognosis. It was a mistake to have brought on labour in this case, although a mistake that many of us might commit, for a first labour must often be considered a trial or test labour; and so in a primipara, unless the indications point clearly to the probability of great difficulty, I do not, as a rule, interfere until the second stage of labour has been in progress some little time.

In conclusion, I would make the following statement as regards diagnosis:—

1. Careful measurements of the pelvis both by the hand and by pelvimeter should be made.

2. An estimate of the size of the child's head should be attempted both by palpation and calipers or the céphalomètre.

3. The relative size of head and pelvis should be estimated, and on that should treatment be chiefly based.

4. In certain cases where the difference in size of head and pelvis is only slight, a decision as regards treatment should only be come to after watching the progress of labour. Especially is this the case in primiparæ.

TREATMENT.

In the time there is left me to devote to treatment you can readily understand that it is not possible for me to discuss the subject exhaustively.

Now, by medium degrees of pelvic deformity I understand, as I have already stated, those cases where the C.V. is round about 3 inches, and where there are several alternative treatments. The alternatives I take to be forceps, version, induction of premature labour, symphysiotomy, and occasionally Cæsarean section and craniotomy.

Before discussing briefly each of these operations, I desire to say a word or two about some of the factors which should guide one in coming to a decision in particular cases. Amongst others, the following may be mentioned:—(a) Whether one sees the case during pregnancy or only after labour has commenced, and if labour has commenced, whether it is at term or not; (b) the general condition of the mother; (c) the presence or absence of any complications. On the part of the child—(a) The nature of the presentation, and, if abnormal, the possibility of rectifying it; (b) the condition of the foetal heart; (c) the presence or absence of any complication, such as malformations, prolapse of cord; (d) a plural pregnancy.

It must be remarked, also, that there are an appreciable

number of cases of pelvic deformity in which spontaneous birth of the child takes place. The degree of deformity below which spontaneous birth is impossible is difficult to fix. I have, however, seen on two occasions a rachitic dwarf with a C.V. of $3\frac{1}{2}$ inches deliver herself without any assistance, and on the last occasion the child weighed $7\frac{1}{2}$ lb. Below that figure I have never seen a woman deliver herself of a normal full-time live child. The following factors influence a spontaneous birth of a full-time child in flat rachitic pelvis:—(a) The presentation—an anterior parietal presentation being very much more favourable than a posterior; (b) the consistency of the head; (c) the occiput being to the more roomy side of the pelvis, for very commonly one side is more spacious than the other.

Version.—During the years 1891 to 1901 in the Maternity Hospital there have been ninety-eight cases of contracted pelvis in which delivery was effected with forceps. There was a maternal death, and a morbidity of 8 per cent. The conjugata vera in these cases ranged from $2\frac{3}{4}$ inches upwards. No woman was delivered by forceps with a vera of less than $2\frac{3}{4}$ inches, and, indeed, that only occurred on two occasions, and the children were dead. As regards the children, one finds that with a vera of 3 inches the mortality is 50 per cent, while with a vera of $3\frac{1}{4}$ inches it is only 13 per cent.

I would, therefore, make the following statements as regards the flat rachitic pelvis and delivery with forceps:—

1. Forceps of the Simpson or Milne-Murray pattern are the best. I have tried several other forms. Neville's forceps I employed for three years, and it has been my experience more than once to deliver a child with Milne-Murray's forceps after trying and failing with Neville's. Others have had similar experience.

2. Walcher's position is frequently an advantage. I have more than once failed to deliver a patient in the ordinary position, and succeeded when I placed her in Walcher's position.

3. I have never succeeded in delivering an uninjured child if there existed an appreciable overlapping of the head at the symphysis.

4. An anterior parietal presentation is much more favourable than a posterior.

5. The lowest limit for forceps should be a vera of $3\frac{1}{4}$ inches, as below that figure the foetal mortality is anything from 50 per cent to 70 per cent, and there is distinct danger to the mother. Of course, there are a few exceptional cases

on record where children have been safely extracted through a vera of only $2\frac{1}{4}$ inches, but such cases are extremely rare, and should not be considered.

6. Forceps should not be applied if the foetal head, after having had time to engage and mould, is still movable at the brim.

Version.—As regards version I have only a word or two to say. During the ten years mentioned there were 42 cases of version; the maternal mortality was 2 per cent, and the morbidity 19 per cent. You remember I told you a moment or two ago that with forceps there was a mortality of 1 per cent, and a morbidity of 8 per cent. As regards the children, I find that once, with a diagonal conjugate of $3\frac{1}{2}$ inches, a child of $5\frac{1}{2}$ lb. was delivered uninjured, but only on one occasion. With a vera of 3 inches the foetal mortality was 65 per cent, and with a vera of $3\frac{1}{4}$ inches 28 per cent, so that again the results are very much worse with version than with forceps.

My conclusion as regards version is that it is a treatment more dangerous to the mother and with an infinitely higher foetal mortality than forceps.

Symphysiotomy.—Next to forceps, the two most important operations to consider, for the particular variety of pelvic deformity we are discussing, are symphysiotomy and induction of premature labour. As regards symphysiotomy, I cannot speak with much authority, as I have performed the operation on only four occasions. The results have been satisfactory, however. All the mothers have recovered without any complications. The conjugata vera was estimated at 3 inches, $2\frac{3}{4}$ inches, $2\frac{5}{8}$ inches. The greatest separation of the bones at the symphysis was $2\frac{1}{2}$ inches. All the children were extracted with forceps, the patients being in the Walcher position. Regarding the children, all were born alive; one child, however, had a spoon-shaped indentation of its skull, which I removed by compression, and also evulsion of the eyeball of the same side.

I am quite convinced symphysiotomy is a most valuable operation if the cases are carefully chosen. The view of Sinclair, that symphysiotomy should be banished from our list of obstetric operations is quite untenable. The cases require to be very judiciously chosen, however. If the overlapping of the head at the symphysis is anything but the slightest, the operation is contra-indicated. With a vera below 3 inches the operation becomes serious, and certainly $2\frac{3}{4}$ inches is the lowest limit. With a vera of 3 inches, however, good

results will almost always be obtained, unless the head is unusually large. With a vera of $3\frac{1}{4}$ inches I would always try forceps first, and only perform symphysiotomy if with moderate traction I failed to extract the child. I do not think the operation should be performed in breech presentations, or if the foetal heart is not beating satisfactorily.

Induction of premature labour.—This, the last treatment I will refer to, would be the ideal operation if only one saw the women early enough in pregnancy, and if one could always tell exactly how far pregnancy had advanced. Unfortunately, that is not always possible. The most admirable paper by Dr. Black on this subject, read before this Society two winters ago, showed only too clearly how unsatisfactory are the results obtained in hospital practice from the induction of premature labour. The infantile mortality, you remember, he told us, was about 50 per cent. In the discussion on Dr. Black's paper, Dr. Edgar supplied two interesting tables made up from the cases of the former. They showed very clearly that the foetal mortality was 78 per cent with a vera of below 3 inches, and 58 per cent with a vera above 3 inches; also, that the best results were obtained when labour was induced in the thirty-fifth week. These figures entirely agree with my own experience; consequently, in a case of contracted pelvis I do not consider induction of premature labour if the vera is below 3 inches. Also, as it is often not possible to arrive at the age of the foetus *in utero*, I induce when the head will only enter the pelvis with difficulty. If I can be sure of the age I consider it undesirable to induce before the thirty-fourth week.

Cæsarean section and craniotomy need not, I think, be considered to-night. If the child is dead, or the foetal heart is feeble, craniotomy should be performed; there is no object in dragging a child through a contracted pelvis if it cannot survive. If the woman has been in labour long before coming under one's care, and if there is the probability of her having been already infected, then, I think, even though the child is alive, craniotomy is the only alternative if one fails to deliver with forceps. Cæsarean section is still an operation with a mortality in our hands at the Maternity Hospital of about 17 per cent. If the cases are seen before labour, and can be properly prepared, we have found the mortality very much lower than that, however. But in operating upon cases in labour, and especially if the cases have been examined by those not fully appreciating the importance of surgical cleanliness, it is an operation of very considerable danger to the

mother. I remember very distinctly seeing with my colleague, Dr. Jardine, a case in which we discussed the advisability of doing Cæsarean section. It was that of a woman who had been in labour for some time, and who had been examined once or twice vaginally before admission to hospital. We thought that the risk of her going septic was too great, and so, although the child was alive, craniotomy was decided upon. The patient became violently septic on the second day of the puerperium. I see it is stated sometimes that it is a crime to perforate a living child. Such a statement is absurd, and is made by those who are either anxious to perform the Cæsarean section on every possible occasion, or have had little experience of the treatment of contracted pelvis. It is occasionally sound treatment to perforate a living child.

Professor Murloch Cameron considered that little faith could be placed on the external method of estimating pelvic deformity, as we were liable to be deceived by the thickness of the tissues. The only certain method was to pass the entire hand into the vagina and by the fingers find the distance between the sacral promontory and the symphysis pubis, while at the same time the entire brim should be palpated. The diagonal conjugate should also be taken. Instead of inserting the fingers, as, in Dr. Kerr's third diagram, he would put in the whole hand, and see if general contraction were present, as this condition was more unfavourable and modified the prognosis. If the pelvis were flat we should examine to see if the transverse were roomy or not. The occiput should be directed towards the wide side, so that engagement in the bitemporal diameter might be got. The head might engage and then become impacted, and it was in such cases that forceps caused injury. A great deal depended on the size and shape of the foetal head. Above $3\frac{3}{4}$ inches (C.V.) the child will be born alive unaided. He would limit symphysiotomy to pelvis with a C.V. of 3 to $3\frac{1}{2}$ inches, but considered it an operation only suitable for hospital, as the after-nursing was so difficult. He was not an advocate of version, as the after-coming head was liable to stick above the brim; it was especially bad practice after an attempt to deliver by forceps. Induction of premature labour should be limited to pelvis of from 3 to $3\frac{1}{4}$ inches C.V., and done between the seven and a half and the eighth month. The forceps might be required, but much depended on the man, as some got good results, others bad. In conclusion, he strongly

advocated Cæsarean section with a C.V. under 3 inches, especially if there were a previously bad history of foetal mortality.

Dr. Samuel Sloan congratulated *Dr. Kerr* on the able manner in which he had introduced the discussion, and also the Council for having arranged it. He thought, however, that it was wiser to look at the matter from the point of view of disproportion and position of presenting part, rather than for the attention to be too exclusively fixed upon deformity of the pelvis. This was, in his opinion, a safer way of looking at the question. Professor Cameron had mentioned that the original shape of the foetal head often determined the difficulty, saying that a round head differed from a long head in this matter. But *Dr. Sloan* said this would depend on the kind of pelvis, a round head being more suitable when the pelvis was a generally contracted one, whilst a long head was an easier fit when the pelvis was flat.

Diagnosis, *Dr. Sloan* said, was, in the view he advocated, less a question of exact size of conjugate (which was difficult and sometimes impossible to determine), or of size and shape of head, which was so also. He maintained that the diagnosis was more clinical than mechanical. The history was a guide beforehand, and the rate of progress was a criterion during labour, as were also the alterations, if any, in the position of the head, the question of interference being determined largely by these, the state of the pulse, and the evidences of nervo-muscular exhaustion. The only advantage of a correct diagnosis, in minor degrees of pelvic deformity, is being able to determine when interference becomes justifiable. It is different in the case of severe deformity, for then mechanical measurement is sufficient, without waiting for the results of nature's efforts, since it is obvious here that nature cannot complete the labour.

As to treatment, *Dr. Sloan* said that in the cases under discussion this resolved itself largely, if not wholly, into a question of forceps. The operation of version was not now considered more advantageous than forceps, as was the case when he read his paper on "The Treatment of Labour Delayed by Obstruction at the Pelvic Brim" before this Society seventeen years ago. The first proposition laid down by him then at the close of his paper was "that mere disproportion between the child's head and the brim of the pelvis is never a sufficient reason for preferring version to the forceps as an original choice in the combined interests of mother and

child." This view, though then generally opposed, is now generally accepted by obstetricians.

Premature labour, in the treatment of disproportion, is sometimes advisable, even with a normal pelvis and a normal head, as in cases of obesity. In such he had found great benefit from a course of thyro-glandin during the later months of pregnancy.

Regarding the forceps, Dr. Sloan said he wished to again warn the obstetrician against the advice of text-books, and of some teachers, that one pair of forceps ought to be made sufficient in all cases. This was a grievous error; and it was surely a poor argument in its favour that it diminishes the weight of the obstetrician's bag. The only case in which almost any kind of forceps will suffice is in uterine inertia. In cases of obstruction, however, much will depend on the kind of pelvis and on the position of the head. With the head at the brim, and lying in the oblique diameter, the higher the presenting part is the more necessity there will be for axis tractors; but with the head at the outlet of the pelvis, the straight forceps, he was convinced, were better and safer; whilst, in such circumstances, when the position is occipito-posterior, the straight forceps alone are safe. Dr. Sloan had, on several occasions, succeeded in delivering a live child in such cases with these instruments, when the double curved forceps had absolutely failed and manual rotation was too difficult or impossible, craniotomy being also the only way out of the difficulty. With the head, again, at the brim and lying in a transverse position, it was often impossible to get the double-curved forceps to lock safely, in spite of frequent withdrawals, and here an antero-posterior pair were safer; although, with the double-curved instrument, under these circumstances, less damage would be done if compression were kept in restraint during traction, and the instrument withdrawn and reapplied after some rotation had taken place. Antero-posterior compression forceps, even if they failed to completely deliver, were sometimes a valuable help, by flattening the head when it lay in a transverse diameter. The straight forceps were sometimes useful, even when the head was high up in the cavity, if the vulva were in a condition of relaxation; and, in one case where the vulva was unusually so, he had succeeded in delivering a live child with safety to the mother with these instruments, when the head was *above* the brim, and when the axis-traction forceps had repeatedly and completely failed. Possibly here the extra bulk of the latter instruments had told against them.

He did not suppose, however, that such a case was likely to occur often. Dr. Sloan detailed some recent cases of labour in which these points were illustrated.

Dr. John Ritchie said that the patient to whom Dr. Sloan referred had had three previous labours, the last terminating, after much difficulty, with the birth of a stillborn child. On this occasion, Dr. Sloan saw her with me on 8th October. He advised that labour should be induced two and a half weeks before term, stating his belief that the obesity of the patient was the cause of the previous difficulty. On this day she weighed 16 st. 4½ lb. She was put on a restricted diet, and had increasing doses of thyroglandin. On 24th November she weighed 16 st. 1½ lb. Labour was induced on 3rd December, but did not actually take place until the night of the 6th. Milne-Murray's forceps failed to bring down the head (which lay in the left oblique diameter), and after compression by Dr. Sloan's forceps, Milne-Murray's were again applied. The head rotated at once, so that a good hold could not be got. The straight forceps were then applied, the large perineum favouring this. With moderate force the head was now brought down.

The child is healthy, and the mother has had no unfavourable symptoms, the catheter not being required. Pulse, temperature, and lochia remained normal throughout.

Dr. Jardine said he had listened with much pleasure to Dr. Kerr's paper. To the general practitioner this subject was a most important one, and he regretted that so few had come to take part in the discussion. He cordially agreed with most of what Dr. Kerr had stated, but there were one or two points he would like to refer to shortly.

In connection with the diagnosis it did not require much acuteness to conclude that a patient had a contracted pelvis if she gave a history of previous difficult labours, inductions, or craniotomies, but in primiparæ you had no such help. In deformed patients one's suspicions should be aroused at once, but there was another thing to be remembered, viz., that if a primipara had a pendulous abdomen the chances were there was disproportion between the presenting part and the pelvis. Another most important point was that at the beginning of labour, and, for that matter, two or three weeks previous, in primiparæ the head was well into the pelvis; therefore, if on palpating the abdomen at the onset of a primiparous labour, the head was found above the brim, there was sure to be

disproportion. To illustrate this, Dr. Jardine referred to a case in the Maternity Hospital. The patient, a primipara, had been admitted some hours previous to his visit. She had been examined by the resident, who had concluded the case was a normal one. On palpating the abdomen, Dr. Jardine at once detected that the head had not entered the brim, and he therefore pronounced the case to be one of a contracted pelvis. On making a vaginal examination, he found the true conjugate was a little over 3 inches. The resident was new to his work, and had not recognised the significance of an unengaged head in a primipara.

In regard to treatment in these cases by the methods of examination pointed out by Dr. Kerr, one could pretty confidently decide as to whether or not the head would come through the brim with forceps or turning. Turning used to be commonly adopted, but it was now largely given up. He could not help thinking the pendulum had swung too far, because there were certain cases in which he believed turning gave a better chance for the child than forceps. He maintained that anterior parietal presentations, which were fortunately the more numerous, were the ones suitable for forceps, but in posterior parietal presentations turning was the more suitable operation. Again, in a pelvis with one side roomier than the other, if the occiput did not lie to the roomy side, turning ought to be adopted in preference to forceps. Of course, turning was not suitable if the uterus was retracted round the child.

Drs. Cameron and Sloan had both referred to forceps, and although it was somewhat outside the discussion, he would like to reply to a few of their contentions. He had always strongly advocated the use of axis-traction forceps, and he had no hesitation in saying that Milne-Murray's or Simpson's instruments were the best which had so far been devised. He entirely disagreed with the contention that there was greater risk of compressing the head with axis-traction forceps than with ordinary ones; in fact, he maintained there was less, provided the instruments were used properly. The blades should be locked with the hand, and the fixation screw merely used to fix the handles in that position. He could not follow Dr. Cameron in his contention that axis-traction forceps prevented moulding of the head; and as regards re-application of the blades when rotation had occurred, that was necessary with all double-curved instruments.

He entirely disagreed with Dr. Sloan as to the advisability of a man being armed with a bagful of different forms of

forceps. Everybody admitted that the straight instruments were the more suitable for occipito-posterior cases, and Milne-Murray had adapted the traction rods to them for use in such cases, but he (Dr. Jardine) had found Milne-Murray's ordinary instruments do so well in those cases that he had given up carrying a second pair of straight ones. Dr. Sloan had described a case where he had failed with Milne-Murray's instruments because the head rotated above the brim. Why the head should have rotated before it entered the brim Dr. Jardine failed to understand.

As regards induction of labour, the chances for the child were small if the pelvis was under 3 inches. The operation should be postponed as long as possible in the interest of the child, but as soon as the head could not be pushed through the brim no time was to be lost. He would shortly refer to one case which illustrated that induction might be necessary with a normal sized pelvis. Dr. Cameron had seen the patient, and would remember the case. The first child had been delivered by craniotomy, the second by induction, but the child had been lost. These operations had been performed in China. The patient's pelvis had a true conjugate of 4 inches. It was a small, but not a contracted, pelvis. Her husband's head was very massive and square, and evidently the difficulty lay in the size of the child's head. He had watched the case carefully, and as soon as the head could not enter the brim easily he had induced labour. She wanted about three weeks to full time. It was a difficult forceps delivery, but the child was saved.

Dr. J. K. Kelly had nothing to add to Dr. Kerr's paper. There was no clinical history to guide us in primiparæ, and all such should be carefully examined when we were engaged to attend them in their first confinement.

Dr. Alex. MacLennan, after drawing attention to the difference in principle embodied in Müller's and Pinard's methods of estimating the size of the pelvis remarked that Dr. Kerr's modification was a very useful combination of both. Attention was drawn to the possibility of an early diagnosis of contracted pelvis in primiparæ by an abdominal examination carried out six to four weeks previous to term. The head was then either in the pelvis or, in certain abnormalities, rested above the brim. The various conditions which caused this were mentioned, and their differential diagnosis outlined.

The speaker was not in favour of version, which he considered should be limited as much as possible.

The President said the discussion had had a distinct educative value. He advised an early diagnosis, so that correct treatment might be instituted at the proper time. This would prevent a variety of operations being tried, one after the other. He agreed that gross deformities were often less important, as they were readily recognised, while, on the other hand, minor deformities often escaped observation. The unrestrained use of chloroform in all cases of difficulty was strongly advocated.

Dr. Munro Kerr replied.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING IV.—19TH NOVEMBER, 1902.

The President, DR. ROBERT M'C. SERVICE, *in the Chair*.

SKIN-GRAFTING.

BY DR. ARCHD. YOUNG.

I. The various methods of Reverdin, Lusk, Thiersch, Wolfe, and Krause were discussed, and the salient points of difference in their technique pointed out.

Dr. Young preferred Krause's method, which was first performed in Glasgow by Wolfe; the grafts in this instance, however, were not applied to a sore, but to a wound made. The lecturer proceeded to describe a modification of Krause's method which he had adopted and found satisfactory. In Dr. Young's method the area of skin required is removed from the front of the thigh, a cut being quickly made to the fascia covering the muscles, and the skin and subcutaneous fat being removed. This flap is put into sterile solution till ready to be put on the surface to be grafted. The graft is turned on to the palm of the hand, the fat is removed by scissors curved on the flat before being placed on the granulating surface. The graft is cut up into pieces if an extensive surface is to be

covered, but if the surface is not large the whole graft can be applied at once. A dressing of protective gauze, soaked in dextrin, and then soaked in 1 to 40 borax solution or salt solution, is applied, with further layers of aseptic gauze soaked in the same solution, and then covered over with gutta-percha tissue. This is changed daily, but the perforated muslin is only occasionally removed in ordinary cases.

Dr. Young pointed out the differences between Krause's method and his own; the chief being Dr. Young's manner of removing the fat along with the skin without rolling up the skin as it is separated; and the application of the grafts directly to the superficial layers of the granulating surface instead of to the deep layers, which would mean rubbing away the superficial layers, and thus inducing oozing. He further preferred the daily moist dressings. Ointments prevented the breathing of the grafts, as it were, and should be avoided. Three patients were shown, in whom, after extensive burns, large areas denuded of skin had been successfully treated by this modification of Krause's method.

II. Dr. Archd. Young then showed a woman, operated on a year ago for an extensive rodent ulcer of the right ala of the nose and the adjacent part of the right cheek, in whom, after extirpation of the disease, a plastic operation was performed. A flap of skin was taken from beneath the inner canthus of the eye.

III. DR. JAMES BATTERSBY showed the following cases:—

1. A woman, æt. 61, from whose forehead a rodent ulcer had been excised.

2. A man, æt. 55, suffering from rodent ulcer, who had been under treatment by the Finsen light rays for eight weeks—for ten minutes each night—without any marked improvement.

3. A man, from whom a crateriform ulcer (Hutchinson) had been removed. Sections of the growth, showing the appearances of typical epithelioma, were shown under the microscope.

4. A woman, æt. 60, with bilateral solid enlargement of the bursa over the tubercle of the tibia (not prepatellar.) This was diagnosed as diffuse gummatous infiltration of the bursæ. The swelling appeared over the right knee three years ago, and over the left eighteen months ago. The patient's condition was improving under antisyphilitic treatment.

IV. Dr. Battersby also read notes of the following cases:—

1. A case of hæmatokolpos from imperforate hymen in a

girl of 16, causing retention of urine, a swelling up to the umbilicus, and colicky pains. A vertical incision $1\frac{1}{2}$ inch in length was made, with no irrigation or packing, and the discharge stopped after a week.

2. A case of a large intra-abdominal abscess on the left side, of obscure origin, and ending favourably by rupture into the bowel, when about 1 pint of pus was passed. This continued to dribble away for a week, and by that time the swelling entirely disappeared. The various possible diagnoses were discussed, the most probable being an appendicular abscess on the left side.

The cases were then fully discussed by the members. *Dr. John Patrick* spoke of the Finsen light treatment of rodent ulcer as being out of date, the *x*-rays being now used.

MEETING V.—3RD DECEMBER, 1902.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

NASAL DEFORMITY REMEDIED BY THE SUBCUTANEOUS INJECTION OF HARD PARAFFIN.

BY DR. WALKER DOWNIE.

The lecturer, after referring to the use of injections of paraffin for this purpose as being a recent innovation, proceeded to show, by means of the lantern, a series of photographs of patients before and after operation for deformities of the nose, chiefly due to the loss of some portion of its framework (either septal cartilage alone, or both cartilage and bone) from syphilitic necrosis or injury. The technique of the operation was fully described—every antiseptic precaution is observed, the skin being prepared as for a surgical operation. Shortly before operating a band of celloidin is painted across the nose at the level of the eyes and down each side of the nose next to the cheek. As this contracts it prevents the paraffin while in a fluid state from spreading beyond the area of the nose. The mixture employed is soft and hard paraffin, having a melting point of 106° F., and sterilised by heat. This is not likely to melt, *Dr. Downie* thought, through any external heat.

or in the event of the patient becoming the subject of a fever with high temperatures. The syringe used is a 10 c.c. glass serum syringe, sterilised by boiling. The paraffin is heated till fluid, and the syringe, previously warmed, is charged with the paraffin, the quantity taken up being enough to have the syringe half or two-thirds full. The chief difficulty, that of preventing the paraffin solidifying in the needle, is overcome by having an electrical current passing through a coil of platinum wire wound round the needle, which is surrounded by moist gauze, and thus becomes a steam-jacket. The injections can then be slowly made, and as the fluid enters the subcutaneous tissues it is guided and moulded by the fingers of the operator, an assistant applying pressure by the fingers to confine it to the nasal region. The quantity injected should be just enough to remove the deformity. The danger of over-doing this was illustrated by a photograph shown on the screen.

The results in Dr. Downie's cases had been entirely satisfactory, the paraffin causing no irritation, but remaining inert and stationary.

REVIEWS.

A Manual of Surgical Treatment. By WATSON CHEYNE, C.B., M.B., and F. F. BURGHARD, M.D. In Six Parts. Part VI—Section 1. London: Longmans, Green & Co. 1902.

IN reviewing one of the early parts of this work, we expressed a doubt as to whether the authors would be able to accomplish the task they had undertaken in the six parts in which it was advertised to appear. Our doubt has been fully justified, for, in spite of progressive increase in the size of the volumes, the authors find themselves obliged to divide the sixth part into two sections, and the first of these forms a volume of 480 pages and costs eighteen shillings. The subjects embraced in this section are the "Treatment of the Surgical Affections of the Tongue, Floor of the Mouth, the Pharynx, Nose, Œsophagus, Stomach, and Intestines." As it thus includes the description of the operative treatment of cancer of the tongue, tubercle of the cervical lymphatic glands, stricture of the œsophagus, gastric ulcer, the various forms of intestinal obstruction (including appendicitis), and the radical cure of hernia, it is, at

once, the most interesting and important of the volumes which have yet appeared.

Everywhere the articles bear evidence of being written by surgeons of wide practical experience of the methods of treatment described, and the reader receives the somewhat dogmatic opinions expressed as being indisputably based on actual knowledge. In this respect the present volume marks a distinct advance on some of the earlier ones, in reviewing which we had occasion to comment on the authors describing modes of treatment which we were convinced they (in common with most surgeons) had long abandoned.

In regard to cancer of the tongue, the authors admit the enormous liability to recurrence after operation, but argue that this should not stay the surgeon's hand, as very considerable extension of life and great increase in comfort are obtained by removal, even where there is extensive glandular implication. "Operation on the growth in the mouth," they say, "should be practised wherever it is at all feasible, because even though recurrence takes place in the glands, and the patient eventually dies of the disease, the termination will be much more easy if the mouth be cleared from the foul poisonous growth which interferes with the patient's taking food, and which is the source of intense agony and discomfort to him." The description of the steps of the dissection necessary for the complete removal of the cervical glands when infected with cancer is most elaborate and complete, and the tyro may well be appalled to find the routine removal of the internal jugular vein recommended. The authors state that they have seen no evil consequences follow its removal, and they add that on several occasions the vagus nerve of one side has been divided with only temporary disturbance of the heart's action!

In the treatment of intussusception a favourable opinion is expressed of the so-called "combined method," that is to say, the combination of laparotomy and injection; at the same time it is admitted that the chances of success by this means "are restricted within somewhat narrow limits." It appears to us that the cases where the bowel can be pushed back by the injection of fluid are exactly those where it can be readily returned by manipulation with an open abdominal cavity, and that the latter is more effective and less dangerous.

As to the radical cure of hernia. Out of the numerous methods which have in recent years been described and practised, the authors select three for description, namely, Macewen's, Bassini's, and Halsted's, but state that they seldom use the latter. In commenting on these, they say, "in either "

(method) "we use *silk* mattress sutures as advocated by Macewen." They give Macewen's own description on a former page, as copied from his article in the *British Medical Journal*, so that it would have been easy to have ascertained that he uses *catgut* sutures.

Speaking of the book as a whole, we may say that it well sustains the reputation of British surgery.

Lectures on the Use of Massage and Early Passive Movements in Recent Fractures and other Common Surgical Injuries, the Treatment of Internal Derangements of the Knee-joints, and the Management of Stiff-joints. By SIR WILLIAM H. BENNETT, K.C.V.O. Second Edition. London: Longmans, Green & Co. 1902.

WE favourably reviewed these lectures on their first appearance, and have only to add that in this second edition there is added an introductory chapter on the subject of the treatment of recent fractures, and five illustrations of skiagraphs of fractures. We consider the author has been successful in demonstrating that the common fear that movement will lead to non-union of the fracture is not based on experience.

Nothnagel's Encyclopædia of Practical Medicine (Saunders' English Edition). Diphtheria, by WILLIAM P. NORTHRUP, M.D.; Measles, Scarlatina, German Measles, by THEODOR VON JÜRGENSEN, M.D., edited, with additions, by WILLIAM P. NORTHRUP, M.D. Authorised Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D. London: W. B. Saunders & Co. 1902.

ONE of the articles in this volume, namely, that on diphtheria, by Professor Northrup, has its origin in New York. The corresponding German paper was not available, as its author had made separate arrangements for issuing a translation. The reader will doubtless find that he has lost nothing by the substitution that has taken place. Dr. Northrup calls attention to the detail with which the subject of intubation is considered. This is explained by the fact that he began his work as pathologist at the New York Foundling Hospital when the first bivalve tubes were used, and was associated

with Dr. Joseph O'Dwyer in the various stages of the evolution of intubation tubes.

The reader may be commended to this volume for wealth of detail and for up-to-date information. As an instance of the former, we may mention the description of Koplik's spots, with the beautiful coloured illustrations by Koplik himself; and as an example of the latter, we may allude to an abstract of a paper on the "fourth disease" which recently appeared in the *British Medical Journal*.

We have again to acknowledge the high merit of this *Encyclopædia* in its English guise.

A Pocket Cyclopædia of Medicine and Surgery. By GEORGE M. GOULD, M.D., and WALTER L. PYLE, M.D. London: Rebman, Limited. 1902.

THIS handy little volume is compact, reliable, and well classified. We thoroughly admire the amount of useful matter the authors have included in the *Cyclopædia*. It contains an excellent synopsis of diagnosis and treatment, and the notes on the various drugs we regard as of great practical value to the practitioner.

We consider the type, symbols, and numerals used in the prescriptions throughout the work as lacking somewhat in clearness; with this exception, however, the volume is a well condensed *epitome* of medicine and surgery, and we can extend to it our highest commendation.

Saunders' Year-Book of Medicine and Surgery. Edited by GEORGE M. GOULD, M.D. Medicine. London: W. B. Saunders & Co. 1902.

THE value of this most excellent annual is now so well known to the profession that it scarce requires further notice from us than just to remind our readers of the issue of this new volume. The general arrangement of the book is precisely similar to that of last year, and its staff of writers, with one exception, also remains unchanged. So that what we said of last year's volume may again be said of this year's. We consider the book invaluable to all who take an interest in the newer movements in medicine; and, indeed, such a work as

this would seem quite essential to anyone who wishes to keep abreast with the recent developments of their profession. The book is well printed and amply illustrated, and we give it our hearty recommendation.

Clinical Methods: A Guide to the Practical Study of Medicine. By ROBERT HUTCHISON, M.D., M.R.C.P., and HARRY RAINY, M.A., F.R.C.P.Ed., F.R.S.E. With upwards of 150 Illustrations and 8 Coloured Plates. New and Enlarged Edition. London: Cassell & Co., Limited. 1902.

THE authors of this manual are to be congratulated on the recognition it has received. The first edition, issued late in 1897, had to be reprinted in each of the three succeeding years. The present volume is a new and thoroughly revised edition. As might be expected, the most important changes are in the sections on the blood, the nervous system, and bacteriology. Different writers naturally have different views as to what should be introduced into a work of this kind, and what should be kept out. For instance, we note the mention (though not in the index) of Morenheim's fossa, but no mention of Dittrich's plugs. We should have reversed the order of importance. There is an omission in the symbols for moist râles on p. 293. We should like to know the authority for the long or accented *ō* in *Distōma* (p. 105).

The book impresses us as an excellent one for students; and the arrangement of the text, the literary style, and the illustrations are such that it should continue to be a favourite.

A System of Physiologic Therapeutics: A Practical Exposition of the Methods, other than Drug-giving, useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. VI: Dietotherapy and Food in Health. By NATHAN S. DAVIS, Jr., A.M., M.D. London: Rebman, Limited. 1901.

THE subject-matter of this volume can scarcely be expected to include much that is new from the practical point of view, but even old subjects require to be presented in the newest light at comparatively short intervals of time. Moreover, there is room for new articles of dietary, and there is much room for

new modes of administration, whereby a patient can be safely tided over periods when the alimentary system is incapacitated for its usual duties. Still, additions to our knowledge must be expected to belong to the scientific in much greater proportion than to the practical side of the subject of dietary.

Professor Davis has rightly aimed at making the present treatise as practical as possible, and he justly notes that the preservation of good health is as important as the treatment of ill-health. He calls attention to the numerous references he has made to the studies on dietetics which have been carried on under the auspices of the United States Department of Agriculture.

The first part of the work is devoted to the general principles of diet, and to diet in health. The second part is on diet in disease. The first part discusses the various elements of food, the different kinds of food, beverages, infant feeding, and food as a cause of disease. The second part begins with the feeding of the sick, and then proceeds to treat of diet in the various diseases. An extensive index is provided.

This volume, we believe, will take its part with the others in doing credit to the series to which it belongs.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, M.D., LL.D. Fourth Edition, Revised and Enlarged, with Chromogravure Plates and other Illustrations. London: Henry Kimpton. 1902.

WHILE Dr. Shoemaker's name is a sufficient guarantee that the work is well done, the fact that this large treatise has reached its fourth edition may be taken as further evidence of the acceptance it has met with in the past. We have every confidence in recommending the book to our readers.

A Concise History of Small-pox and Vaccination in Europe. By EDWARD J. EDWARDES, M.D.Lond., M.R.C.P. London: H. K. Lewis. 1902.

A GREAT amount of time and labour must have been expended on the preparation of this manual, which consists, to a large extent, of statistics. These should be of great value to all who are studying, writing about, or lecturing on the subject

of vaccination; but to the reader who tries to work right through the book, the long succession of figures, which might convince any honest intellect as to the value of vaccination, becomes actually monotonous. The historical account of small-pox, inoculation, and vaccination is also deserving of commendation.

The importance of obligatory revaccination at school age is urgently emphasised, and it is pointed out that not only Germany, but also Italy, Hungary, Roumania, and Japan, are ahead of Britain in this respect. The book deserves the careful attention of both the medical and the lay public.

A Practical Treatise on Small-pox, Illustrated by Coloured Photographs from Life. By GEORGE HENRY FOX, A.M., M.D., with the collaboration of S. D. HUBBARD, M.D.; S. POLLITZER, M.D.; and J. H. HUDDLESTON, M.D. London: J. B. Lippincott Company. 1902.

THIS treatise and atlas ought to be of value to teachers and practitioners of medicine as well as to students. The plates are sixteen in number, but some of them contain several figures each. They give excellent illustrations of the different varieties and stages of small-pox, from the first day to the twentieth, and vaccinia and varicella are also illustrated. The work is decidedly meritorious.

Doctor Therne, Anti-Vaccinist. By H. RIDER HAGGARD. London: George Newnes, Limited. 1902.

WE have pleasure in calling the attention of our readers to this cheap edition of Mr. Rider Haggard's parable, written as it is with the earnest desire to promote the efficiency of vaccination against small-pox. It is Mr. Haggard's "first and last novel with a purpose," and cases are known where anti-vaccinists have been vaccinated as a result of perusing the book in its older form. A large number of appeals reached the author asking for a cheap edition for the very purpose he had in view in writing it, and, after consideration, he, through his publishers, Messrs. Longmans, Green & Co., who fully sympathised with his views, arranged with Messrs. Newnes to include the volume in their sixpenny series. We hope that

the story, in its new guise, will have an immense circulation, and a greatly increased influence for good among the people.

Clinical Lectures on Hydatid Disease of the Lungs. By ALFRED AUSTIN LONDON, M.D.Lond. London: Baillière, Tindall & Cox. 1902.

THE author explains that these lectures were delivered to the students attending the clinique of the Adelaide Children's Hospital in 1897. They have been revised since then, and whatever they were to begin with, they now constitute a capital little treatise on pulmonary hydatids. We have gained both instruction and pleasure from the examination of the book, and we can heartily recommend it to all who are in any way interested in the subject. Though so common in Australia, the disease is fortunately rare in this country, but an excellent idea of its features will be obtained from a careful perusal of Dr. Lendon's lucid, interesting, and well written lectures.

Lectures on Chemical Pathology. By C. A. HERTER, M.D. London: Smith, Elder & Co. 1902.

THIS book is made up of a series of lectures delivered during the sessions 1899-1900 and 1900-1901 to the students at the Bellevue Hospital Medical College, New York. The subjects dealt with are few in number, but they are of the greatest interest, partly owing to their obscurity, but chiefly on account of the very admirable manner in which the author handles them.

The first chapter is devoted to "The chemical defences of the organism against disease." Then we have several lectures on "The chief food-stuffs and their fate in the body in health and disease." Other two chapters are devoted to "The chemical pathology of hepatic disease," another to "Diabetes," and the last to "Starvation, under-nutrition, and obesity." The author tells us that his aim has been "only to sketch the leading characteristics of the physiological and pathological processes that have come under discussion, without describing these processes fully or systematically." In this way the book is full of suggestion rather than crude fact, and so it forms an admirable introduction to the study of scientific

medicine. The author's attitude of mind towards his subject, too, is eminently scientific, and in that he teaches his students a method of thought which may be equally useful in other branches of medicine. In short, these lectures are admirable, both in form and subject-matter, and they might well serve as a pattern to all lecturers in medicine. They give also a clear and judicial account of the most recent research work in the field of chemical pathology. We have every confidence in recommending this book to our readers.

Saint Thomas's Hospital Reports. Edited by DR. HECTOR MACKENZIE and MR. G. H. MAKINS, C.B. Vol. XXIX. London: J. & A. Churchill. 1902.

WE have pleasure in noting the issue of this new volume of *Saint Thomas's Hospital Reports*. It is the report for the year 1900, and therefore somewhat late in appearing. But we would not press this point, for we know only too well the difficulties attending the publication of such an annual, and we would rather congratulate the editors on their new volume. This year's issue, in its general form and subject-matter, is similar to those in former years, and therefore calls for no special comment. Both the medical and surgical reports, as well as those for the special departments, are of much interest, and are models of what such reports should be. There are in addition to these some half-dozen papers on various subjects, e.g., an "Analysis of one hundred and thirty-seven cases of intussusception," by Mr. Sargent; "Some cases of hydro-nephrosis," by Mr. Battle; and "A review of the cases of tetanus treated at Saint Thomas's Hospital during the last thirty-six years," by Mr. Milward.

The volume generally seems quite up to the high standard of former years.

L'Art et la Médecine. Par le DR. PAUL RICHER. Paris: Gaultier, Magnier et Cie.

WE shall not attempt to give here an adequate notice of this magnificent work by the well-known master in art as well as in medicine. The book is a quarto volume of 562 pages, with 345 illustrations, which are reproductions of works of art of various ages and degrees of celebrity. In his endeavour to show what painters, sculptors, and others have done in representing disease and deformity, Dr. Richer has examined all

sorts of ancient and modern works of art, and he gives us here beautiful reproductions of a large number of them. The subjects illustrated include demoniacal possession, dwarfs and various grotesque figures, the blind, parasites, leprosy, plague, dropsy, paralysis, the urine, tooth extraction, surgical operations, and death. Figures and text together, this work may well take rank as a classic in medicine. It is a suitable ornament for the table of the physician, and great pleasure as well as profit may be anticipated from a careful study of the volume.

Die Neueren Augenheilmittel. By DR. M. OHLEMANN.
Wiesbaden: Verlag von J. F. Bergmann. 1902.

THIS is an excellent book, and cannot fail to be of use to those students and practitioners who take any interest in the more recent developments of ophthalmic therapeutics. Serum treatment and treatment by radiant energy equally find a place with older and more common remedies. Altogether the book seems to be thoroughly up to date.

Vier Vorlesungen aus der allgemeinen Pathologie des Nervensystems gehalten vor dem Royal College of Physicians of London am 19, 21, und 28 Juni, 1900, von FREDERICK W. MOTT, M.D. Lond., F.R.S.; Uebersetzt von DR. WALLACH. Mit einem Vorwort von PROFESSOR DR. L. EDINGER. Mit 59 Figuren im Text. Wiesbaden: Verlag von J. F. Bergmann. 1902. (Obtainable in Glasgow from F. Bauermeister.)

THOSE who read Dr. Mott's very important lectures as they appeared in the weekly medical journals at the time, will be glad to have them available in collected form, and will also be pleased that they have been laid before the medical profession of Germany in its own language. Professor Edinger, in his preface, states that he read the lectures as they were published in English with great pleasure, not only because they gave with particular freshness a review of the most important points in the pathology of the nervous system, but also because they made known to him a whole series of original observations made by the author and his colleagues which had not been previously published, or had at least not appeared in an easily accessible form. It is scarcely necessary for us to emphasise the value of these lectures.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

The Condition of the Deep Reflexes in Transverse Lesions of the Cord.—By Dr. W. B. Warrington (*Med. Chron.*, November, 1902).—This paper is a critical review of recent literature dealing with the condition of the deep reflexes in transverse lesions of the cord. It considers in detail Dr. Bastian's proposition that a complete lesion of the cord is always accompanied by flaccidity of muscles and loss of tendon reflexes below the seat of injury. Cases are quoted to show that, with complete lesion of the cord, the tendon reflexes may sometimes be present; and other cases which show that, with incomplete lesions, the reflexes may be absent. The theories which try to explain the loss of the deep reflexes in such cases are then examined. They come under two main groups. First, those which maintain that the lumbar centres must be involved, not necessarily by a gross lesion, but probably by some toxic agent or by some nutritive change. Second, those favouring the view that the loss of the reflexes depends on the loss of continuity in the fibres of the cord, and so cutting off the influences of the higher centres. This second theory is based on the hypothesis of Hughlings Jackson, which gives an antagonistic influence to cerebrum (inhibitory) and cerebellum (exciting). When the pyramidal tract is destroyed, this permits unrestrained action of the cerebellar influences (through fibres in the anterior part of antero-lateral tract), and so there is increase of muscle tone and tendon reflex. When, on the other hand, both influences are cut off, as in complete lesion of the cord, there results flaccidity of muscles and loss of tendon phenomena. Evidence in favour of this view is drawn from those cases of acute combined sclerosis, in which, so long as only the pyramidal tract is affected, the muscle tone is exaggerated; but, so soon as the other long fibre-system of the antero-lateral tract becomes involved, the muscle tone goes and flaccidity is the rule. A third theory explains the loss of the reflexes as due to an increased inhibitory impulse arising from irritation at the seat of the lesion itself. The author concludes as follows:—"A consideration of the above recorded cases affords strong evidence for the belief that, whilst in general the symptom group described by Bastian follows complete transverse lesions of the cord, yet, when the disease is of a slowly progressive nature, the reflex functions of the cord may be maintained and the muscular tone be unimpaired, and also that in some cases very severe symptoms approximating to those generally found after complete transverse lesions may be present, and yet the anatomical lesion be slight and incomplete. This is especially observed in compression of the cord, and indicates that physiological loss of function may be produced without marked anatomical change."

Case of Acute Leucocythæmia. By Dr. C. H. Melland (*Med. Chron.*, September, 1902).—The patient, a butcher's assistant, aged 24, first came under observation on 22nd August, 1899. Six months before, he had had an attack of "influenza," from which he said he recovered, but never so completely as to feel quite well again. At this time there was some temporary enlargement of the glands in the neck, due, probably, to tonsillitis, from which he seems to have been suffering. Then, three months later, he had hæmorrhage into the uvula, which became greatly enlarged, and, being incised, a good deal of blood was lost. From this time onwards, he was not able to do any work, and it was from this time that he dated the onset of his illness.

Otherwise, progressive weakness, anæmia, and oozing of blood from lips, gums, and mouth were the chief symptoms. An examination of the blood was made on the day of admission to hospital. The result was as follows:—

Hæmoglobin,	35 per cent.
Red corpuscles,	1,900,000 per c.mm.
White corpuscles,	104,600 ,,

in these proportions—

Large lymphocytes,	82.0 per cent.
Small lymphocytes,	17.0 ,,
Polymorphonuclears,	0.8 ,,
Myelocytes,	0.2 ,,
Eosinophiles,	None.

At this date, there was very slight enlargement in the glands of the neck, but no enlarged glands elsewhere, and the spleen was not enlarged. The blood was again examined on 10th September, and showed—

Hæmoglobin,	30 per cent.
Red corpuscles,	1,400,000 per c.mm.
White corpuscles,	53,000 ,,

Of those last, 39.4 per cent were small lymphocytes, and 60.6 per cent large lymphocytes; no other form of leucocyte could be discovered. Hæmorrhages were now pretty profuse, and the patient went rapidly downhill, dying on 15th September. The temperature during residence in hospital showed a distinctly febrile reaction, steadily rising from 100° to 104°. The *post-mortem* examination was largely negative, the only tissue showing important changes being the bone-marrow. This was made up almost entirely of lymphoid cells, both large and small. Normally, bone-marrow is the seat of origin of the red corpuscles and the polynuclear white corpuscles, but, being wholly converted into a lymphoid tissue, its function as a blood-forming organ becomes almost completely destroyed. This, in Dr. Melland's opinion, accounts for the rapid anæmia from which the patient suffered. The other tissues of the body were not examined microscopically, but to the naked eye they showed no infiltration of lymphoid tissue. The glands in the neck were the only glands enlarged, and they were so only to a slight extent.

Another case of leukæmia, almost the same as the above, is described in the *American Journal of the Medical Sciences*, vol. cxxiv, p. 653.

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

The Surgical Importance of the Caput Coli as a Factor in the Etiology of Inflammation of the Vermiform Appendix.—In a short paper in the *Buffalo Medical Journal* (December, 1902) attention is drawn to the part played by the caput coli in the causation of appendicitis. The writer of the paper is J. P. Creveling, M.D., of New York.

After a reference to the anatomical relations of the cæcum as regards intestinal function, in which he specially dwells upon the location of the caput "at the base of a practically vertical tube," the "fluid-pouch" character, and the great disadvantage under which it labours in discharging its contents, Creveling emphasises the exaggeration of all these drawbacks, "when the cæcal pouch is crippled by inflammatory adhesions, and the tendency there is in such a case for any infective inflammation of the wall of caput to spread to the appendix—just as, presumably, in cases which are clearly primary appendical in origin the converse may be expected, and is known, to occur.

Moreover, he proceeds, "the symptoms, clinical manifestations, and structural changes in the two are in no way dissimilar, except as influenced by the size of the canal."

As the result of his own observations, Creveling concludes that "a large percentage of the disorders involving the colon, appendix, and adjacent structures have their origin in the cæcum, and in many instances are mere extensions from continuity of surface. After extensive morbid changes, and pus accumulation, it is not always easy to determine in what part the disease began."

"It is quite impossible to differentiate the two conditions when certain symptoms prevail, and," he goes on, "some of us have opened the abdomen for appendicular trouble and found that organ involved secondarily, or even in a comparatively healthy state."

Two cases are cited by Creveling as apt illustrations not only of the difficulty of differentiation, but also of the benefit derived from operation in cases of cæcal inflammatory adhesions, which, by their merely mechanical action, "interfere with the full physiological function of the bowel."

The first case mentioned is that of a patient whose illness—an acute one—was described by the physician in attendance as "the most typical case I have ever seen, every symptom just right and characteristic." Creveling, called in consultation, felt that the diagnosis of acute appendicitis was the only one possible. Operation was performed at once. "The appendix was found to be quite small and quite normal, except at the cæcal end for half an inch or so down the tube." "The cæcum was, however, much inflamed and already well covered with inflammatory product, which had fastened it to the parietal wall." Especially notable is the fact that on careful examination of the appendix, subsequent to removal, the only evidence of inflammatory involvement of the appendix was in the half inch at its cæcal end, and that only affecting the serous covering, mucous membrane and muscular coat being practically free. Here, there seems to be no doubt, "the disease in the vermiform was secondary to, and due to, progressive inflammation of the cæcum."

The cæcum was liberated, adhesions severed, and bowel returned to the cavity free. On the day of operation the temperature was 102° F.; pulse, 98; on the following day both had receded to normal.

The second case was that of a girl who for seven years, between ages 14 and 21, suffered at intervals from what was generally regarded as a recurrent appendicitis. This diagnosis was endorsed by quite a number of experienced men. The prime attack (at the age of 14) was exceedingly acute, and took several months to pass off. Operation for some reason was not permitted till the patient was 21 years of age, and the appendix, which was thought to be the seat of the disease, was found to be "rather under size, without any appearance of disease, or indications of ever having been diseased." The cæcum, on the other hand, was found to be "adherent to the anterior wall of the abdomen to near its entire length." It was freed, brought well out of the wound, and thoroughly investigated, then the abdomen was closed. Recovery was perfect, and absolutely no return of the old symptoms had, up to date, returned.

As regards this case, it only remains to mention that the prime attack was characterised, among other things, by the appearance of a small oval tumour, which was diagnosed as swollen appendix. In the light of the subsequent *dénouement*, it can only be explained as due to a "local peritonitis" consequent on the cæcitis.

Creveling mentions the fact that perforation of cæcum may occur in such cases quite independent of appendix involvement. He cites a case in which this occurred "through the end of the cæcum by way of ulceration." "In this case the calibre of the bowel was constricted by inflammatory exudate, and the pouch extremely distended." "A faecal accumulation, much too large to have been retained in the appendix, was found floating in the cavity of the abscess."

The Preparation of the Hands for Surgical Operations.—In the *Liverpool Medico-Chirurgical Journal* (October, 1902) is a note by

T. B. Grimsdale, B.A., M.B., Liverpool, on this subject, in which he recommends very strongly the method of Professor Shatz, of Rostock. Grimsdale has employed this method for over two years, and is evidently fully satisfied with its efficiency. The details are as follows:—

1. The *mechanical* part—which consists in scrubbing hands and fore-arms with a boiled nail-brush, using soap and hot water, for seven minutes by the clock; the water is running water. Particular attention is paid to the nails and the spaces between the fingers.

2. The *chemical* part—which consists in soaking hands and fore-arms in a hot saturated solution of permanganate of potash until the hands and fore-arms are stained a deep brown colour, then scrubbing with a hot saturated solution of oxalic acid until they are completely decolourised, and subsequently rinsing in lime water to neutralise the acid.

In Grimsdale's note are given the results of three distinct series of tests—the first where the hands were in their ordinary condition before sterilisation, the second and third where the hands were wilfully infected before sterilisation. Of these, the second and third were carried out by independent observers, who were sceptical of the uniformly sterile results of the first series. The three reports are appended, and they indicate pretty well the severity of the tests:—

I. *By Dr. E. E. Glynn.*—Hands examined before and after sterilisation in manner as above.

	BEFORE STERILISATION.		AFTER STERILISATION.	
	Petri Dish.	Nail-Scraping.	Shaving.	Nail-Scraping.
Dr. G.	R. index—15 colonies. L. index—20 colonies.	Not sterile.	Sterile.	Sterile.
Dr. K.	About 60 colonies.	do.	do.	do.
Nurse.	20 colonies.	do.	do.	do.

II. *By D. J. H. Abram.*—Hands of operators and assistants soaked in broth cultures of bacillus prodigiosus and sarcina lutea, then treated in usual manner.

1. A finger in each case soaked in a bottle containing sterile broth.

2. Scrapings from under finger-nail and nail-fold inoculated into sterile broth.

3. A piece of loose skin from one case, the contents of a papule from another; both inoculated into broth.

(a) 1 c.c. taken within an hour from 1, and plated in a jar.

(b) 1 c.c. taken within an hour from 2, and plated in a jar.

(c) All the material incubated at 37° C.

No growth in any case.

III. *By Dr. Charles E. Hill.*—Hands infected by soaking in a twenty-four hours' broth culture of bacillus coli communis (Escherich) for two minutes, then allowed to dry, and subsequently sterilised in the usual way.

Cultures taken as follows:—

1. Scrubbing skin with sterile sandpaper.

2. Scraping under and around finger-nails with a sterile needle.

3. Soaking a finger in sterile broth for two minutes, incubating for twenty-four hours, and making cultures from that.

4. Scraping off flakes of epidermis.

In every instance cultures were made in bile-salt broth, and incubated at 42° C. for forty-eight hours.

The following results were obtained (8th January, 1902):—

	Sandpaper Rubbing.	Nail-Scraping.	Epidermal Flake Scraped off.	Finger Soaked in Broth.
Dr. G.	Between left index and middle finger. Right index finger.	Left middle finger.	Right index finger.	—
Dr. H.	Between right thumb and index finger. Between left third and fourth fingers.	—	Right index finger.	Left index finger.
Dresser (Mr. W.)	Back of left wrist. Between right thumb and index finger.	Left fourth finger.	Right index finger.	Right index finger.

Result after forty-eight hours' incubation—*all sterile*.

As result of these observations, Grimsdale believes that the following statements, which he quotes from a leading article in the *British Medical Journal*, 13th April, 1901—"Practically, the skin can never be rendered sterile;" "In cleansing the hands, all parts are certainly not subject to the same measure of attention;" "The area of the skin, tested by many culture experiments, is infinitesimal . . . and therefore any result obtained by such experiment is only approximately correct"—are erroneous, and he believes that, in the light of the above, there is no need to give utterance to the despondent cry of Lady Macbeth—"What, will these hands ne'er be clean?"

He draws attention to the fact that is, of course, well known to every surgeon—viz., that "there is a considerable art in washing the hands," and states that, "if a man is careful, he may learn much from the permanganate method. He can see where the dirt lodges, and can appreciate how difficult it is to dislodge it . . . also how easy it is to miss large areas entirely. It is instructive to watch anyone go through this process for the first time. You are nearly certain to find a *brown* patch on the under surface of his wrist, . . . around his nails, and between his fingers in the wrinkles. This teaches a lesson which the student would not learn unless you could demonstrate to him his deficiencies."

Finally, and of no small importance, Grimsdale maintains that this process is less trying to the hands than any method he has yet used. His hands do not get sore or chapped, the skin does not become rough, and there is no odour of operation left.

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

Vesicular Keratitis and Keratalgias.—In the current number of *Knapp's Archives* there appears a translation of Dr. W. Stood's interesting paper on recurrent formation of vesicles on the cornea and keratalgias after injuries of the corneal surface. Such cases are not very common, for the author finds them in 0.15 per cent in forty thousand cases. They occur after such injuries as a scratch with a finger-nail, a scratch with a pointed leaf, or

an injury with a splinter of wood striking the eye tangentially. By such an injury the epithelium is scraped off, but the membrane of Bowman does not seem to be affected. The injury heals easily, and vision is soon restored to the condition in which it was before the wound.

After some weeks, or even months, the patient begins to suffer pain on awakening in the morning. There is difficulty in opening the eye, and if the lid be forcibly lifted there are all the usual signs of photophobia.

Examination of the cornea reveals the presence of a clear vesicle beneath the epithelium, or a slight displacement of the epithelium at the seat of injury. If the cornea be examined later in the day, as a rule, nothing is to be observed.

Sometimes the attacks are much more severe. There is intense irritation, with swelling of the lids and inflammation of the eyeball. As a rule, the vesicle bursts, and there is no permanent change such as opacity. Within a week of the bursting of the vesicle the eye assumes its normal appearance, and no trace of the vesicle is to be found. Rarely, and, of course, only by accident, the cornea becomes infected, there being found a distinct hypopyon.

The author finds one characteristic symptom in all the cases, namely, that the pain is most severe on awakening from sleep, and there is great difficulty in opening the eye on account of photophobia. This, however, can be avoided or greatly mitigated by simple massage of the lid before attempting to open the eye. Incised wounds never give rise to any such condition, but in all the cases there is a history of the epithelium having been torn off.

Dr. Stood's line of treatment is massage at bed time, with a 1 per cent ointment of yellow oxide of mercury. He believes that thereby a delicate coating is formed over the epithelium which prevents its adhesion to the lid.

A Method for the Prevention of Symblepharon after Burns of the Conjunctiva.—Dr. Syndracker has obtained an excellent result by clamping the eyelid between two plates made of lead and thoroughly everting the lid. The lead plate on the conjunctival surface is so arranged as to put the tissues of the fornix thoroughly on the stretch.

From time to time the bulbar surface is brushed with a strong solution of silver nitrate.

Mycotic Affection of the Cornea.—The importance of bacteriology to the ophthalmic surgeon has recently received further illustration. Wicherkiewicz, of Cracow, lately saw a peculiar growth on the cornea, which did not extend to the true corneal tissue. A little of it was scraped off, and the microscope showed it to be a growth of *penicillium glaucum*. More than twenty years ago Leber called attention to mycosis of the cornea. In his case there was found to be *aspergillus fumigatus*.

Prophylaxis of Myopia.—In the current number of the *Ophthalmic Review*, Liebreich has a paper dealing with the very important question of the prevention of myopia, which seems to us to contain a somewhat valuable suggestion, namely, that children who hold their books closer than is good should be required to wear prisms when working.

We do not at all see the necessity of the author introducing the angle B. It is merely a function of the distance between the centres of rotation of the eyes, and there is no reason whatever why that distance should be taken instead of an angle which cannot be even roughly estimated in the living subject.

The author says that when the distance between the centres of rotation is great, there is a greater strain on the convergence than when it is less. This involves, according to his theory, a larger amount of accommodative effort than would ordinarily be required, so that for distinct vision the child has to bring his book too near. In passing, it may be remembered that the relation of the function of accommodation to that of convergence is not so constant as the author seems to think. Still, it will be important if clinically

the suggestion proves of use. After all, the proof of the pudding is the tasting of it.

BULLER, of Montreal, has recently adopted a simple plan in dealing with cases of **Cataract Complicated by a Purulent or Septic condition of the Lachrymal Passages**. His plan is to ligature the superior and inferior canaliculus thoroughly before operating by extraction. Such cases are always a cause of anxiety to the surgeon. In most of them little is to be gained by the regulation probing and washing out, and such a proceeding before a cataract operation is not to be relied upon. For some years back our own practice has been to remove the lachrymal sac altogether where such conditions exist. A patient suffers practically no inconvenience after its removal. If, however, Buller's method is as safe there is no reason why it should not be adopted, for it seems more simple.

It is with deep regret that we notice the death of Professor Parras, for so long connected with the clinique of the Hotel Dieu, Paris. He was one of the best clinicians of our time, and one of the most considerate and worthy of men. In the number of the *Arch. d'Ophthal.* which announces his death a paper appears from his pen.

DENTAL SCIENCE.

By J. DOUGLAS BROWNLIE, M.B., CH.B., L.D.S.

Alveolar Pyorrhœa.—Znamensky, in a recent paper (*Journal of the British Dental Association*), discusses fully the etiology and pathology of pyorrhœa alveolaris or Rigg's disease. He had the opportunity of examining sections cut from the jaws of a woman, who was suffering from the disease at the time of her death. His conclusions are:—

1. The process in the bone in pyorrhœa alveolaris is a rarefying osteitis.
2. The disease develops primarily in a suppurative inflammation of the gums, which makes its way down to the bone, and sets up the osteitis.
3. Atrophy of the sockets, leading to loosening of the teeth, but without suppuration and deposit of tartar, is not a form of alveolar pyorrhœa.
4. Such atrophy affords a favourable soil for the development of pyorrhœa alveolaris.
5. Debilitating diseases, like rickets, syphilis, tuberculosis, the exanthemata, tabes dorsalis, diabetes, and anæmia, as well as poor feeding and repeated pregnancies, lead to atrophy of the bony sockets of the teeth.
6. The lack of proper care of the teeth during such exhausting processes leads to the deposit of tartar, and suppurative gingivitis which readily passes into an alveolar pyorrhœa.

For treatment, where the sockets are not deeply involved, he considers removal of the tartar, and use of antiseptic and astringent mouth washes, with suitable diet, sufficient. When the sockets are more deeply involved, "it is indispensable to scrape out the socket."

As a prophylactic measure, he advocates the mastication of tough and solid substances, such as crusts of bread; and, during the existence of any exhausting disease, special attention should be given to the hygiene of the mouth, to prevent the deposit of tartar as far as possible.

The Treatment and Care of Children's Teeth.—F. C. Porter (*Journal of the British Dental Association*) draws attention to the special need of due care being given to the teeth of children during the period from the completion of the temporary set till the permanent canines are erupted. Cleanliness is very important, and he points out that it is not until some time after the eruption of the second temporary molar—from 2-2½ years—that a

child can use the toothbrush in a proper manner. The brushing of a child's teeth by its mother or nurse should be as much a part of the daily routine as washing its hands and face.

The exciting cause of dental caries is the formation of small plaques of acid-forming bacteria on the surfaces of the teeth, where, if they are undisturbed, they attack the enamel by means of the acids they secrete, and make their way into the dentine, which they rapidly destroy, until finally exposure of the pulp, with all its attendant evils, results. He goes on to point out that certain food stuffs are of value for their local action in the mouth, where they perform the functions of mechanical cleansers by rendering thorough mastication necessary before they can be swallowed. Other advantages of active mastication at this period are the increased blood-supply to the alveoli and jaws, and consequent improved nutrition during the development and eruption of the permanent teeth (which are intended to last through the lifetime of the individual).

Very starchy foods, on the other hand, such as white bread, starchy biscuits, and sponge cake, which require little mastication, and which bulk largely in the diet of modern children, are locally injurious in the mouth, as they are apt to leave the teeth covered with a sticky paste, which, unless immediately cleared away by the toothbrush, affords an excellent culture medium for bacteria to develop in. This coating also renders the cleansing action of the cheeks and tongue, and the washing action of the saliva, extremely difficult, and more or less imperfect. Such a state of affairs is probably an important factor in the early decay of the six-year-old molars as well as the temporary teeth.

On the custom of cutting food very small before giving it to the child, he says:—"This practice once begun is apt to be kept up long after the need for it has gone by. As a consequence, the child gets into a slovenly way of eating; he will, from sheer force of habit, neglect to use the natural forces of mastication, and the teeth will be covered with an unhealthy sticky paste such as I spoke of."

In answer to the question, "Are sweets bad for the teeth?" he quotes Dr. Sim Wallace to the effect that the gum produced as one of the bye-products of cane-sugar fermentation in the presence of water must be an effectual barrier to the beneficial action of the saliva, as well as a food-retainer and acid-fermentation protector. So we may take it that his answer to the question is in the affirmative.

BACTERIOLOGY.

By A. R. FERGUSON, M.D.

The Bactericidal Influence of the Roentgen Rays. H. Reidei (*Munich. Med. Wochens.*, 1902, No. 10).—The author found that twenty to thirty minutes' exposure sufficed to kill the vibrio of cholera, bacillus prodigiosus, and bacillus coli in plate cultures. The precise influence in this result of the fluorescent light, of the temperature, and of the electrical conditions were not differentiated. Whether the rays influence gas-production, or the fluorescence or phosphorescence characteristic of certain species, remains still uncertain, but the pigment formation of bacillus prodigiosus was not affected. The morphological characters and apparently also the toxic power of certain organisms is modified. The action of the rays on bacteria in the living tissues is much restricted. It may be stated that the healing process in superficial lesions depends not so much on the bactericidal action of the rays, as on the reactive inflammation of the skin and underlying tissues.

Researches on the Contagium of Small-pox. Dombrowski (*Zeitschr. für Klin. Med.*, Bd. xlv, 1902).—The material selected was the

blood, pus, and contents of eruption of variolous patients. The surface of the pustules was cleansed with soap, mercuric chloride solution and ether; they were punctured with a sterile needle, only those being selected in which the exudate was clear, and as free as possible from either red or white corpuscles. Under a magnification of 730 diameters (Zeiss homog. immers., γ_1 and oc. 3), were seen minute, rounded, dark points, having a clear border. These were in constant movement—a rapid pendulum-like motion and a slower progressive one. Two days later, the author observed longer (two or three times the size of the above) granules with definite contour, and showing motility. In the midst of these larger bodies, which are hyaline or transparent in appearance, were observed generally four dark points which constantly changed their position, assuming chain-like or circular grouping. Sometimes a minute dark granule separated itself from such a group, and vanished out of the field. The more puriform the pustular contents become, the fewer minute forms are observed, but on the other hand the larger, more definitely spherical forms are always found. These forms (the size of a coccus) are transparent, yellowish coloured, sharply defined, and with a definite small white border. One finds them mostly in the protoplasm of the leucocytes, but also as solitary granules, sometimes motionless, sometimes motile or as diplococcus-like forms with straight or sinuous border. Sometimes appearances are met with closely resembling the 'budding' of yeast cells, and Dombrowski believes that the multiplication of the parasite occurs exclusively by this means.

Dombrowski investigated the contents of abscesses occurring in six patients under strict aseptic precautions, and found the same organisms as in the contents of pustules—the larger forms predominating. The more minute granule-like forms are always free, and the more limpid the fluid, the more active are their movements; the larger occur generally in the interior of leucocytes, and, contrary to Pfeiffer's belief, much more often at the periphery of the cell than round its nucleus.

These bodies did not stain with Löffler's or Ehrlich's solution, but were differentiated from the ground substance of the dried film by means of eosin.

The author found bodies in fresh preparations of blood from cases of variola, comparable in all respects with the smallest forms previously found in pus. These, although free for the most part, occasionally occurred in the interior of red or white corpuscles. Their size and transparency serve to distinguish them from the much larger opaque granules which in course of time appear in the red corpuscles in badly-prepared specimens.

The contents of pustules and abscesses were investigated on various agar and gelatine media. The former showed various kinds of pyogenic organisms, but the latter showed no bacterial growths.

From parts of the cultures perfectly free from visible bacterial growth, bouillon emulsions were made, which, microscopically, contained bodies similar to those found in the pustules and the blood.

Similar bodies were found in cultures made from the blood of variolar patients. They were found to stain feebly in preparations made from cultures with methylene blue.

The author believes these "bodies" to be the specific cause of variola, and further, that they are more nearly related to the blastomycetes than to the protozoa.

On Bacilli resembling Tubercle Bacillus and Bacilli of Smeagma Secretions. A. Weber (*Arbeiten a. d. Kaiserl. Gesundh.-A.*, Bd. xix, 1902, p. 251).—The author deals in a comprehensive article with the increasing number of bacilli which are found to resemble more or less closely the tubercle bacillus. During an investigation undertaken to ascertain the frequency of occurrence of the tubercle bacillus in market butter, the author isolated from a guinea-pig, which had received an intra-peritoneal injection of butter, a bacterium which, on the ordinary fat-free culture media, possessed no acid-fast property, but which acquired this property when grown upon agar prepared with various kinds of animal fat, butter, olive oil,

lanolin, &c. Cultures on lanolin-agar were found to possess the greatest degree of acid-resisting power. The author is of the opinion that the bacteria which become "acid-fast" when grown on culture media containing fats, acquire this property as a result of the assimilation of the fat during their growth. In sixteen out of eighteen examinations made on smegma secretion bacilli were obtained which on lanolin-agar media became acid-fast. These, which were only distinguishable from the pseudo-diphtheria bacillus by this peculiarity of staining and by their "leaf-like" growth, the author regarded as true smegma bacilli.

Books, Pamphlets, &c., Received.

- Four Lectures on the Nature, Causes, and Treatment of Cardiac Pain, by Alexander Morison, M.D. Reprinted from the *Lancet*, Nos. 1, 8, 15, and 29. 1902.
- Inoculation against Malaria, by Dr. Philaethes Kuhn, with a Table of Curves, Translated by H. A. Nesbitt, M.A. London: H. K. Lewis. 1902. (2s. net.)
- Diseases of the Skin, Their Description, Pathology, Diagnosis, and Treatment, with Special Reference to the Skin Eruptions of Children, by H. Radcliffe Crocker, M.D., F.R.C.P. Third Edition, with Four Plates and One Hundred and Twelve Illustrations, in Two Volumes. London: H. K. Lewis. 1903. (28s. net.)
- Biographic Clinics: The Origin of the Ill-Health of De Quincey, Carlyle, Darwin, Huxley, and Browning, by George M. Gould, M.D. London: Rebman, Limited. 1903. (5s. net.)
- The Elements of Pathological Anatomy and Histology for Students, by Walter Sydney Lazarus-Barlow, B.A., B.C., M.D. (Camb.), F.R.C.P. (Lond.) London: J. & A. Churchill. 1903. (24s. net.)
- The Diagnosis and Modern Treatment of Pulmonary Consumption, by Arthur Latham, M.A., M.D. London: Baillière, Tindall & Cox. 1903. (5s. net.)
- What a Piece of Work is Man, with Christian Evidences, by Frederick James Gant, E.R.C.S. London: Elliot Stock. 1903. (2s. 6d.)
- A System of Clinical Medicine for Students and Practitioners, by Thomas D. Savill, M.D. Lond. Vol. I: Local Diseases and Microbic Disorders. London: J. & A. Churchill. 1903. (12s. 6d. net.)
- Diseases of Women: A Clinical Guide to their Diagnosis and Treatment, by George Ernest Herman, M.B. Lond., F.R.C.P., with upwards of 250 Illustrations. Revised Edition. London: Cassell & Company, Limited. 1903. (25s.)
- Histology (Catechism Series). Edinburgh: E. & S. Livingstone. (1s. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 21st FEBRUARY, 1903.**

	WEEK ENDING				
	Jan. 24.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.
Mean temperature, . . .	38·0°	45·8°	45·5°	47·0°	45·6°
Mean range of temperature between day and night, .	8·3°	8·2°	11·6°	9·8°	9·9°
Number of days on which rain fell,	6	7	5	6	3
Amount of rainfall, . ins.	0·79	1·40	0·19	2·54	0·54
Deaths registered, . . .	410	342	357	278	297
Death-rates,	27·1	22·6	23·6	18·4	19·6
Zymotic death-rates, . .	4·2	2·9	3·0	3·1	2·6
Pulmonary death-rates, .	7·4	7·2	6·7	5·1	6·0
DEATHS—					
Under 1 year,	80	75	74	60	62
60 years and upwards, .	89	76	86	53	57
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	...	2	2	2	...
Scarlet fever,	2	2	3	4	3
Diphtheria,	3	4	7	1	1
Whooping-cough, . . .	41	27	22	22	20
Fever,	8	3	5	10	7
Diarrhœa,	10	6	6	8	8
Croup and laryngitis, .	1	4	1	...	...
Bronchitis, pneumonia, and pleurisy,	94	90	67	56	62
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	1	...
Diphtheria and membranous croup,	22	13	10	17	12
Erysipelas,	17	14	16	13	18
Scarlet fever,	44	38	39	44	43
Typhus fever, . . . . .	...	...	4	3	...
Enteric fever,	9	14	23	25	13
Continued fever, . . .	...	1	...	2	...
Puerperal fever, . . .	2	2	3	1	5
Measles,*	38	45	50	69	56

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 25th February, 1903.

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ORIGINAL ARTICLES.

CAN ANYTHING SPECIAL BE DONE BY THE MEDICAL
PRACTITIONER TO DIMINISH THE FREQUENCY
AND LESSEN THE MORTALITY OF CANCER OF
THE UTERUS?¹

By J. K. KELLY, M.D.

WHEN your Secretary asked me to introduce a discussion in this Society, I thought there could be nothing more useful than for the members to discuss the subject of cancer of the uterus, to talk over the means they use in order to diagnose the presence of that disease, and the measures they are in the habit of adopting to combat it.

Since I began special work in gynæcology, nothing has impressed me more than the generally hopeless condition of the cancer patients who are sent into hospital for operation. I think I may safely say that in nine cases out of every ten that are sent in we can give nothing but temporary relief, if even so much. And it has often been a question with me why that should be so.

In attempting to answer that question, I have come to the conclusion that the main reason lies in the want of an educated public opinion with regard to cancer. The public—and in this case it is the female public—is not sufficiently

¹ An introduction to a discussion at the Glasgow Northern Medical Society, 3rd March, 1903.

well informed as to the symptoms of cancer to lead them to consult their physician in time. So many false ideas regarding menstruation have been inherited by the female sex, that all sorts of irregular hæmorrhage are supposed to be the monthly discharge, which on this supposition, instead of being specially characterised by the regularity of its recurrence, is subject to all sorts of aberrations. And most serious of all, the increase of the flow, both in frequency and amount, is regarded, if not with complacency, at least with far less dread by the woman than the complete absence or diminution of the flow. Very few women know that amenorrhœa in itself is an element of safety, though it may be one of the indications of some serious systemic disturbance. It is, indeed, sometimes a hard task to convince a mother that a daughter suffering from amenorrhœa should not have something done to her to bring on her menses, the fact being that the amenorrhœa is the very salvation of the girl, who has no blood to spare from the other developmental processes that are going on. And it is the same in later life. A woman near the menopause will come to her physician about some trifling pain in the stomach, or about some headache which is nothing but an indication of unhealthy regimen, far more readily than about a hæmorrhage from the uterus which is sapping her very life. If she refers to the latter at all, it is perhaps with rather a feeling of satisfaction that at her age she is so healthy—indeed, healthier than she used to be, as her monthlies come now every fortnight instead of every four weeks.

But the education of public opinion in medicine is the outcome of the work of the medical practitioner. What the medical men of one generation know about disease becomes the possession of the public of the next generation, and the popular ideas which are prevalent now are inherited from the physicians who preceded us. In our own time, ideas are passing from the medical profession to the public much more quickly than in former times, and the position we reach in any department of medicine is soon attained by the intelligent portion of the contemporary public. What we want first, therefore, is the educated opinion of the medical profession; and, in regard to cancer of the uterus, we may be sure that whatever we can definitely declare concerning its nature, and the mode of checking its mortality, will soon be adopted and acted upon by the general public.

This, then, is the question I wish to bring before you to-night—Can we formulate any rules for ourselves by

following which we can diminish the frequency and lessen the mortality of this disease? And it is because I think we can do so that I have ventured to place the question before you.

First of all, then, I would ask—Why is cancer of the cervix such a frequent disease?

For the answer to this question we do not require to wait for a solution of the question as to the essential nature of cancer. Even with a Cancer Commission, it may be long before that point is solved for us. But it is sufficiently well known that cancer starts from some long-continued local irritation. Its seats of election throughout the body are the localities subject to persistent irritation—the lip, the tongue, the upper and lower ends of the œsophagus, the pylorus, the rectum, and so on—all localities where, either naturally or by accident, there is frequent and long continued irritation. What is the position of the cervix with regard to this? Surely if there is one part of the female body which is subject to frequent and severe irritation it is the cervix of the child-bearing woman. It is crushed, and bruised, and torn at the time of labour; and if there are repeated pregnancies, the same injuries are renewed again and again. The influence of this is shown by the fact that the tendency to cancer increases with the number of pregnancies. It is a fact easily proved from statistics, and also easy to keep in mind by us all, that a woman who has had several children is more liable to cancer of the uterus than a woman who has had none.

Child-bearing itself, then, inflicts injury on the cervix, and has a direct tendency to induce malignant disease. Can we do anything to lessen the injury? Is there anything in the management of labour that we should do or avoid doing in order to spare the cervix?

Here I think the most important rule to follow is to give plenty of time for the dilatation of the cervix during labour. Except in deformed pelvis, you may lay it down as an axiom that a slow first stage is without danger. I have heard it is a boast with some men that they spend very little time over their confinement cases. They rupture the membranes, dilate the cervix manually, and deliver with the forceps. The injury to the cervix in these cases must be incalculably greater than when the equable elastic liquid pressure of the amniotic sac, and the uniform tension of the uterine wall, bring the act of dilatation to completion without artificial aid. Non-interference with the natural dilatation of the cervix will often obviate the occurrence of laceration, and so diminish the injury produced by the labour. But even with the greatest

care laceration is not to be entirely avoided. When it does take place, and especially if it extends, as it sometimes does, beyond the cervix into the vaginal fornix, there is no doubt that it should be sutured at once, both with a view to prevent septic risks during the puerperium and also to prevent the remote risk of cancer in later life. The cervix, like the perineum, should be examined for laceration after labour.

But besides this relation of child-bearing to cancer, there is another fact the relation of which to cancer of the cervix is not so easily proved, but which I consider of the greatest moment in the causation of the disease, and that is the great frequency of catarrh of the cervix. This disease, which is the main source of the leucorrhœa that is so frequent in women, is the most common disease of the female sex. It is essentially a chronic affection, and represents just such an irritation as is associated with the appearance of cancer in other localities. It has been unfortunately customary for more than a generation to treat this disease by irritant applications of various kinds—nitrate of silver, nitric acid, iodine, carbolic acid, and so on. I am convinced that this treatment adds fuel to the fire, and increases the risk of malignant invasion, which always attends cervical catarrh. There would be no harm if one or two such applications cured the disease; but this is not the case. I hear frequently of women who have had such applications made at frequent intervals for months and even for years. Just as I would warn against the immediate danger of a salpingitis in intra-uterine applications, which also are still too commonly used, so would I warn against the more remote, but I believe not less real, danger of cancer in applications of irritants to the cervix.

While, however, it is necessary to avoid doing harm by our treatment, it is important to cure the cervical catarrh. But this is often a difficult task. The periodic fluxion to the uterus at the time of menstruation, the frequent fluxion that probably takes place during coitus, the congestion of the pelvis that accompanies the constipation so common among women, are all factors that militate against its cure. But in treating it we should follow the principles that guide us in the treatment of catarrhs elsewhere, and in these we do not resort to the heroic methods that have been adopted in the case of the cervix.

Occasionally, in the treatment of catarrh of the cervix, we require to betake ourselves to what is called minor surgery. The catarrh, for example, is sometimes kept up by the ectropium that results from a laceration of the cervix, and exposes the

lining of the cervix to the irritation of the vaginal contents. In these cases it is necessary to repair the laceration and cover in the exposed cervical mucous membrane.

In other cases, again, the catarrh is kept up by the presence of small cystic glands in the mucous membrane, and then should be carefully emptied by puncturing; or, if they are numerous, the part of the cervix in which they are lodged should be excised so as to remove the source of the irritation.

Except in cases such as these, however, it is perhaps better to abstain from local treatment of the cervix except by vaginal douches, which ought always to be used to keep the vagina free of decomposing material.

There is one other cause of cervical catarrh which is supposed by many to increase the predisposition to cancer, and that is gonorrhœa. In the female this disease has its special habitat in the cervix, and the frequency of gonorrhœa is one of the reasons why cervical catarrh is so common. Some have thought that the supposed increase of cancer in modern times is due to the increase of gonorrhœa among our population. No statistical proof of the relationship can be adduced; but it is certainly a most probable one, and adds additional gravity to the attack of gonorrhœa in the female. This disease in the male is perhaps more marked by the pain and irksomeness than by the mortality of its effects, and has always, and rightly, been put on a much lower grade of severity than syphilis. But, in the female, gonorrhœa is one of the most serious diseases, having for its immediate and almost certain result an attack of purulent salpingitis with all its attendant dangers, and involving the risk of cancer at a more remote period.

The other conditions that predispose to cancer of the cervix we cannot so easily influence. We cannot prevent the recurrent hyperæmia of menstruation; we cannot change the histological relations of squamous and cylindrical epithelium at the os externum, which have probably something to do with the tendency to abnormal cell-growth in that part; we cannot prevent the natural changes in the cervix that go on as the woman advances towards old age; nor can we interfere with the social conditions that make the life of so many women an incessant round of anxiety and overwork, though we may be fain to hope with Sinclair "that cancer may be banished by social ameliorations such as have made leprosy in England purely a historic disease."

With regard to these causes and predispositions to cancer we are powerless, but I consider that much may be done

to diminish the frequency of cancer of the cervix by a careful management of labour, on the one hand, and, on the other hand, by a careful treatment of cervical catarrh whatever its cause.

The second point we are to consider is this—When cancer does occur, have we any means of lessening its mortality?

This question resolves itself mainly into a question of diagnosis. With our present knowledge of cancer, we know of no means of cure except complete extirpation of the part diseased. And the hopelessness of advanced cancer of the cervix lies in the fact that we cannot extirpate the whole of the tissue involved. Our only hope of lessening the mortality, therefore, is by recognising the disease at an early stage when it is still confined to a part that can be completely removed. Undoubtedly there is such a stage in every case, and no effort on our part should be spared to recognise it then.

Much scepticism is often expressed as to the possibility of recognising cancer at an early stage, but I maintain that, with our present knowledge of the histology of the disease, such scepticism is unfounded. It is not the knowledge that is wanting, but the opportunity. We do not get or we do not take the chance of recognising the disease early enough.

In many cases, we do not get the opportunity to recognise the disease. I have already mentioned the fact that women think lightly of uterine hæmorrhage, and this indifference, along with the natural dislike to a vaginal examination, accounts for many of the hopeless cases we meet with. This indifference to hæmorrhage is no doubt due to the familiarity of the female sex with a hæmorrhagic discharge. All through their adult life they are accustomed to a periodic loss of blood which would be considered alarming if it occurred in a man, and, accordingly, when it takes place at irregular times and in larger quantity than it used to do, little importance is laid upon it unless it produces a marked effect upon the health. In the same way, feelings of pelvic discomfort are not unusual throughout menstrual life. Exposure to cold during menstruation, some overwork at that time, some general disturbance at the time menstruation is due, even from mental excitement at that time, may all be accompanied by more or less pelvic pain. Women attribute little serious importance to a feeling with which they have long been familiar, and which, from their experience, has not hitherto affected their general health. It is accordingly only when the pelvic pain becomes excessive that they think of consulting their medical attendant about it.

Women are unaware of the significance of hæmorrhage and

of pain, and it is their carelessness about these symptoms that is the main reason why we have so often no opportunity of recognising cancer at all till it is far advanced. Occasionally, however, we get the opportunity and do not seize it. How often is it the case that a woman comes to her doctor and says, "I am changing too often. Can you not give me something to stop it?" and her doctor says, "Oh, yes; I'll give you some ergot, and after you have used it for a time you must let me know how you are. If you are still losing too much, I'll have to examine you." And after a few months she comes back and he examines her—and the opportunity has been lost!

Why did the doctor not examine her at first? In no other region of the body would we think of treating hæmorrhage with a bottle of ergot without ascertaining the cause of the bleeding. But there is a general idea that ergot has some special action on uterine hæmorrhage, and that idea is responsible for more harm, perhaps, than all the good that valuable drug has ever done.

Perhaps another reason why the patient is not examined is that she looks so well. She is possibly stout, well-coloured, hearty and vigorous, without any suggestion of illness in her appearance. Far less is there any suggestion of cachexia, and it is an idea very prevalent in the profession that we should expect cachexia as one of the symptoms of cancer. This is a most dangerous idea. It is not uncommon to find advanced cancer in a woman who looks quite healthy, and, as a rule, cachexia develops only at an advanced stage of the disease. A patient who is cachectic has reached the hopeless stage, and if we wait for cachexia we wait till it is too late.

These three facts, then, I would like to insist upon with all the stress in my power. When there has been long-continued hæmorrhage, when there has been severe pain, when cachexia has set in, the cancer is beyond the early stage, and is probably too late for cure. We must not wait for these symptoms. They are not to be regarded as mere warnings of the attack of the disease. They are rather indications that the attack has been a successful one, and the victim is already doomed.

The three symptoms of cancer of the cervix on which the main importance is usually laid are bleeding, pain, and fætid discharge. We may briefly consider the place of these symptoms in the diagnosis.

The bleeding most significant of cancer is that which occurs after the menopause. If a woman has reached middle life and

has ceased menstruating, there should never again be a return of hæmorrhage from the vagina. If it does return, it indicates cancer in the vast majority of cases. In earlier life, hæmorrhage more frequently indicates myoma, or salpingitis, or metritis, or a retroversion, but even at an early age cancer is not unknown, and the cause of the bleeding ought to be ascertained in all cases by physical examination.

Pain of a severe kind is often a very late symptom of the disease, and I incline to think that when severe pain occurs early in the course of cancer it indicates a rapidly advancing form.

Fœtid discharge occurs sometimes from other causes than cancer. It is often present in endometritis, and indicates merely that the discharge has had time to become putrid before escaping from the vagina. But this discharge is usually in small quantity. A copious, offensive discharge, even at an early age, generally indicates cancer, and cancer, too, that has passed beyond the early stage.

These three symptoms are not usually indications of early cancer. When they are present the case has advanced beyond the early stage. They are rather to be considered as urgent symptoms, and indicate the need for immediate search after their cause. No woman who comes to the consulting-room complaining of one, and still more, of all of these symptoms, should be allowed to leave without a vaginal examination being made.

But I would like to plead for more than this. When bleeding and pain and fœtor are present the case is very probably an advanced one. We should not wait for the development of these symptoms. Any pelvic discomfort whatever should be traced to its cause, and this rule should be laid down with especial force in the case of women who are at or approaching middle life. So much depends upon early recognition of the disease that we should exercise the greatest circumspection in tracking every pelvic trouble to its source. Wherever there is pelvic trouble an examination of the pelvis should be made. It is only when both physician and patient are alive to the importance of this rule that we shall have a fair chance of an early recognition of the disease.

What, then, are we to expect to find on making an examination?

We are not to expect a tumour in early cancer. When the cervix forms a large mass, whether this be a smooth nodular tumour or that curious broken growth which has been well-named cauliflower excrescence, the disease is already far

advanced—probably too far for extirpation. Cases of this kind are again and again sent into hospital as being suitable cases for operation, when the time for operation is long past, and the cases are hopeless.

In the early stage cancer occurs either in the form of a small hard patch or of a small ulcer, usually at the edge of the os externum. The most common hard patch on the cervix is caused by some cicatrix resulting from a laceration. But the smooth, firm linear border of this can be easily recognised as cicatricial, and on examination by the speculum it is easily distinguished by its non-vascular condition from the mucous membrane, which it divides.

Another common hard nodule on the cervix is formed by a distended follicle, but these are usually numerous and give the feeling of well-defined—we might say “shotty”—tumours embedded below the surface. The cancerous nodule, on the other hand, is on the surface, is irregular, shades off towards its borders, which are ill-defined, and, on examination by the speculum, the little nodule is hyperæmic and not pale, as compared with the neighbouring mucous membrane.

The small hard patch is probably the first stage of cancer, but usually the earliest form with which we meet is the small ulcer. There is an idea still prevalent, though, fortunately, it has not the prevalence it once had, that ulceration of the cervix is not uncommon, even apart from cancer, and when men meet with an ulcer of the cervix they are not at first alarmed by it. Another idea is that syphilitic ulcer of the cervix is not uncommon, and if there is any suggestion of syphilis in the case, such as frequent abortions, quite apart from any distinct history of syphilitic infection, we are sometimes advised to try antisyphilitic treatment for a time.

My experience, on the the other hand, is that if we have an actual ulceration of the cervix it is hardly ever anything but cancer. We meet with a tubercular ulcer on rare occasions, with a syphilitic ulcer on still rarer occasions, at least in Glasgow, and I may say we never meet with any other ulcer of the cervix except the decubitus ulcer of prolapse, and this is easy enough to account for and to heal. All other ulcers of the cervix are cancerous. I am convinced that the knowledge of this fact would go a long way in sending cancer cases to us in an early stage.

I must, of course, guard against misunderstanding here. One of the most common appearances at the os is a red raw-looking surface which very closely resembles a granulating ulcer, and was, in fact, regarded as ulcer by the early

gynæcologists. This, which is now misnamed erosion, is not an ulcer. In many cases it is merely the lining membrane of the canal of the cervix exposed by the gaping of a laceration. In other cases it represents an advance of the proper cervical epithelium beyond its normal limits on to the surface covered by the paler squamous epithelium of the vaginal wall. This erosion is one of the evidences of that cervical catarrh which I have already referred to as so common and as probably the main cause of the frequency of cancer in the cervix. The epithelial overgrowth, in fact, which is normal, except for its situation in cervical catarrh, may be conceived as requiring only a further development of proliferative energy to transform it into a cancerous condition. But even the digital examination of these erosions at once distinguishes them from an ulcer. Their smooth, velvety, and rather raised surface is quite different from the excavated and usually harsh surface of an ulcer. But if doubt arises, and this is the special point I wish to reach, the doubt can be solved. If there is the slightest suggestion of a ulceration of the cervix, either to digital examination or to examination by the speculum, then a part of the suspected cervix should be removed for microscopic examination.

There are some men who still express doubt as to the histological proof of cancer. They will tell you, "We sent a piece of tissue to a pathologist, and he said it was epithelioma, and yet the case got better and is living years after"; or, "We sent a piece to another, and he said there was nothing malignant about it, and yet it turned out to be cancer after all." We may be sure that the men who speak in this way are not themselves pathologists, and it is unreasonable to slight the labours that have been spent and the results that have accrued from the investigations on this subject. There are, of course, early stages in cancer-growth when the difference from the normal structure is so slight that no one can say with certainty that cancer is present, but there may be enough to arouse suspicion, and if suspicion be aroused we are already on the way to prevent the progress of the disease. For if the case is suspected it will be watched, and if it is watched the advance of the disease will not be great before we can be certain about it. For when the cancer is beyond what may be called its embryonic stage there can be no doubt whatever about the microscopic examination. This, then, is the basis on which we plead for an early histological examination of a suspected cervix. And if we get a cancer thus early, we have good ground to expect a cure by operation.

Dr. Lewers, in his recent book on *Cancer of the Uterus*, puts forward "a suggestion to facilitate early diagnosis." This suggestion is that the Cancer Commission, or some institution such as the Royal Colleges of Physicians and of Surgeons, should print a leaflet mentioning the essential facts which it is desirable that women should know regarding the early indications of cancer, and especially regarding hæmorrhage. He thinks this leaflet might be distributed by medical men to all—matrons, nurses, district visitors, and so on—who could put such knowledge to good purpose.

This suggestion of Dr. Lewers is so far a good one, and would aid us to a certain extent in the early detection of cancer. But we need to anticipate the development of pronounced symptoms. We must, if possible, detect the disease before any of its classical indications are present, and for this such a leaflet would be insufficient. The education of our women in the knowledge of disease has hitherto been, and will always naturally be, the unconscious result, and, as it were, the bye-product of the work of the physician. When we ourselves realise the important facts in a diagnosis, our knowledge gradually filters through to those who are tending our patients, and to the patients themselves. If we ourselves, then, would believe that the treatment of cancer is hopeful when we diagnose it early, and if we continually strive after such early diagnosis, the opportunities for early recognition of the disease will become more frequent. Public opinion, as I said at the beginning, will soon come to our aid, and we shall have good ground to hope for a lessening of the ravages of this disease.

THREE CASES OF DIFFERENT FORMS OF CONGENITAL SYPHILITIC DISEASE OF THE EYE OCCURRING IN THE SAME FAMILY, WITH REMARKS THEREON.¹

By JAMES HINSHELWOOD, M.A., M.D.,

Surgeon to the Glasgow Eye Infirmary, and Clinical Assistant to the
Regius Professor of Medicine in the University of Glasgow.

At the Eye Infirmary congenital specific affections of the eye are comparatively common, but it very rarely happens that three members of the same family appear before us exhibiting striking examples of different forms of specific eye affection.

¹ These cases were shown at the meeting of the Medico-Chirurgical Society held on Friday, 6th February, 1903.

The three children referred to were brought by their mother on 31st January, 1903, to the Eye Infirmary in order to discover if anything could be done to improve the defective sight of her three children.

The oldest patient was a girl, 14 years of age. On examination, it was found that her pupils were irregular, and that there were numerous and extensive iritic adhesions present in both eyes. This was beautifully seen on attempting to dilate the pupil with homatropine. On examining the cornea also, a fine nebular opacity was present in each cornea, the result of an antecedent corneitis. The mother informed us that this child had had, five years before, a severe attack of inflammation of the eyes, and since that she had been unable to see properly. From these appearances, it was evident that this had been an attack of corneo-iritis.

Parenchymatous or interstitial corneitis is the most common form of congenital specific disease of the eye, and is often accompanied, as it had been here, by iritis. Her hearing also became much affected during the attack of inflammation of the eyes, no doubt due to disease of the internal ear, which is a common result of congenital syphilis. The patient also showed, in the most typical manner, Hutchinson's teeth, the central upper incisors showing the vertical notch in the most typical form.

The second patient was a boy, aged 12 years. He also had typical Hutchinson's teeth, but nothing could be seen on external examination of the eye. On ophthalmoscopic examination, however, his fundus presented a beautiful picture of one of the rarer forms in which hereditary syphilis manifests itself in the eye, a peculiar form of retinal degeneration. A good representation of this is given in Haab's *Atlas of Ophthalmoscopy*, plate 39. This picture exactly represents the condition found in our present patient. The retina looked as if it had been sprinkled with fine coal dust, especially towards the lower part of the fundus, whilst all over the fundus, but best seen towards the periphery, were a great number of small yellowish-white spots, looking like little masses of exudation. This sprinkling of fine black spots over the fundus had a superficial appearance, and gave one the impression that they were in the retina. There were no large patches of pigment to be observed at all. The optic disc was pale, and the retinal vessels were of small calibre. These appearances were more marked in the right than the left eye.

The third patient was a girl, aged 9 years. Her central incisors, although not exhibiting the vertical notch described

by Hutchinson, showed a distinct approximation to this type, being stunted and with a marked gap between them. Her eyes externally appeared normal. On ophthalmoscopic examination, she was found to have choroiditis of the type which is very commonly found in cases of hereditary syphilis. The disc was found to be pale, and the retinal vessels were narrowed in calibre. Over the fundus were observed numerous punched-out areas of about a quarter of an inch in diameter. These punched-out areas were circular in shape, of a yellowish-white colour, bounded generally by a ring of black pigment. These appearances were most manifest in the right eye.

In each of these three patients, then, the syphilitic virus has attacked a different part of the eye—in the first patient, the cornea and iris; in the second, the retina; and in the third, the choroid. These cases thus afford a striking clinical illustration of the different forms of eye disease dependent upon congenital syphilis, and the protean variety of the manifestations of the specific virus.

The appearance of the eyes, the Hutchinson's teeth, and the maternal history made positive the diagnosis of congenital syphilis. The maternal history affords a good example of the persistency of the specific taint. Out of eleven births, there are only three untainted members of the family living.

1. Girl, æt. 19, alive and healthy.
2. A boy, lived 2 months.
3. A stillborn child.
4. A girl, æt. 14, with corneo-iritis, deafness, and Hutchinson's teeth.
5. A boy, æt. 12, with disease of the retina and Hutchinson's teeth.
6. A girl who lived 2 hours.
7. A stillborn child.
8. A girl, æt. 9 years, with choroiditis and stunted upper central incisors.
9. A stillborn child.
10. A boy, æt. 3 years, healthy.
11. A girl, æt. 1½ year, healthy.

From the birth of the oldest untainted child to the birth of the next untainted living child there is thus a period of sixteen years during which the taint has been active, as is vividly shown in the above history. Besides, these two youngest children, as yet healthy, may develop specific symptoms later in life, so that we cannot yet assume that they are free from taint.

The mother, a woman of about 45 years of age, looks in good health, and we were unable, on cross-examination, to elicit any history of specific symptoms in herself. This, however, in no way affects the diagnosis. It is a well-established fact, which Jonathan Hutchinson has emphasised, that a mother exhibiting during her life no symptoms of syphilis may bring forth a syphilitic progeny. This is what Hutchinson calls sperm inheritance, where the taint is received directly from the father at the very starting point of existence. We have had no opportunities of seeing the father, and therefore can say nothing further on this point. It is a curious fact that in such cases, where the woman bears a syphilitic progeny inheriting from the father, and remains herself free from symptoms, a state of constitution is silently acquired which protects her from syphilis in the future, and which thus enables her to nurse her syphilitic progeny without any risk of contracting a nipple chancre.

Another point of clinical interest in the present cases is that, apart from the Hutchinson's teeth and the eye symptoms, and in the oldest patient the deafness, there were no other traces of specific disease. There were none of the early symptoms of specific taint. There were no scars about the angles of their mouths, no prominent frontal eminences, no sunken noses or earthy pallor. The children were healthy-looking children, and there was no history in any of these cases of early infantile troubles, such as snuffles, mucous patches, or cutaneous eruptions. The absence of the appearances above referred to, or of the history of early symptoms, does not at all invalidate the diagnosis of the specific character of the later symptoms. The severity and course of cases of congenital syphilis vary precisely as do cases of the acquired disease. We are all familiar with cases of acquired syphilis, where the primary sore and secondary symptoms may have been of the most trifling character, and may not even have been observed by the patient, and yet where later in life severe and indubitable symptoms of syphilis have appeared. So it is with the congenital disease. Children who during the first few years of life may present no signs whatever of specific taint, may yet exhibit later in life indubitable symptoms of specific taint. This has been impressed upon me particularly by my experience of congenital syphilis at the Eye Infirmary, and the three patients under discussion at present are excellent examples of this clinical fact. The eye is an exceedingly delicate organ, and is profoundly influenced by any changes in the general nutrition of

the body. Hence it is so frequently affected by the syphilitic virus, both in the acquired and congenital forms of the disease; and, from the permanent changes generally left, the eye very frequently affords the most valuable evidence as to the past history of the patient.

With regard to the treatment of diseases of the eye due to congenital syphilis, great benefit may be derived from mercurial treatment, combined with full doses of syrup of the iodide of iron. The mercury I administer either in the form of grey powder or by inunction. Of course, we must recognise the limits of treatment, and not expect too much from it. No treatment can repair or restore tissue which has been destroyed or irreparably damaged. In syphilitic choroiditis, such as was present in the youngest patient, no treatment can restore the patches of choroid which have been destroyed. In all cases, however, specific treatment properly carried out can put an end to the activity of the specific poison and to the further progress of the disease. Hence the great importance of early diagnosis, before extensive damage has been done to the delicate structures of the eye. Hence I would urge the necessity of an ophthalmoscopic examination being made at the earliest possible period in the cases of infants or young children who may show evidence of defective vision. Unfortunately, we do not see these little patients, as a rule, until their vision has become very defective, and the delicate structures of the eye irreparably damaged. In these cases early diagnosis is of the utmost importance, as it is then, before destruction of tissue has taken place, that the greatest benefit can be derived from treatment.

CASE OF MARKED DILATATION OF THE SUPERFICIAL ABDOMINAL AND THORACIC VEINS WITHOUT EVIDENT CAUSE.¹

By W. R. JACK, B.Sc., M.D.,
Assistant to Professor of Medicine, Glasgow University.

THE patient was an ironmoulder, aged 40, whose history was as follows:—

Eight years ago, while at work, he was seized with an

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 7th November, 1902.

attack of sickness and vomiting, from which he recovered after a week in hospital. On resuming work, his right arm, and later his face, began to swell, and he returned to hospital for a month, but without benefit. He then attended a doctor for four or five months, being occasionally able to work for a day or so at a time, but in 1896 he went to Edinburgh Royal Infirmary, where he was treated for aneurysm of the aorta. After fourteen weeks, he was dismissed somewhat improved, but he had to return a year afterwards, when a diagnosis of thoracic tumour was made. He remained under treatment for about the same time, and resumed work, which he was able to carry out with fair regularity—working about six weeks and resting for one—until March, 1901, when pain below the angle of the right scapula made him enter the Glasgow Western Infirmary.

An abstract from the account in Professor Stockman's journal brings out the following points:—The patient had had "pleuro-pneumonia" on four occasions, the last about six years before admission. He had also had a "chancre" sixteen years before, but there was no evidence of syphilis, either in his history or upon examination. He began work in a coal-mine at about the age of 11, and continued it for two years, when he commenced ironmoulding, a notoriously heavy occupation.

The symptoms he complained of were these:—He felt well on going to work in the morning, but, after stooping at his work, his face felt swollen and became blue, and his voice got husky. On rising, his sight was dim, and he got very giddy, and was inclined to fall. After about five minutes he could resume work, but further stooping renewed the attack. This state of matters continued all day, but was quite relieved by the night's rest.

The condition revealed upon examination was as follows:—The patient was strong and healthy looking, and there was no cedema anywhere. The left pupil was slightly dilated as compared with the right. The superficial thoracic and abdominal veins were very large, dilated, and tortuous, the circulation in them running from below upwards, except in one to the right of the rectus muscle, where the direction was reversed. The veins of the legs and arms were enlarged to a less extent. The cardiac dulness was normal, and the heart sounds pure, but at the base the second sound was much accentuated. There was slight resistance, without obvious dulness, over the manubrium, and also at the right base (the seat of the former "pleuro-pneumonias"), but the R.M., V.F.,

and V.R. were everywhere normal. The pulse was normal, and equal on both sides. There were no alterations in other organs, and the urine was normal. A skiagram of the thorax revealed no abnormal condition, neither aneurysm nor tumour being apparently present.

After a month's residence, the man was dismissed feeling the better for the rest, but with the condition of the veins unchanged. He returned in September, his symptoms having recurred a month before as the result of hard work, and was again in hospital for a month. The condition was identical with that on the previous visit. He came under the writer's care at the Dispensary of the Infirmary in the summer of 1902, and returned at intervals of a month or two for occasional advice. The condition, both as to signs and symptoms, remained unaltered.

The case is remarkable on account of the very excessive degree of dilatation of the superficial veins, and the almost complete absence of the physical signs usually accompanying the ordinary causes of obstruction of the vena cava within the thorax. There is no direct evidence of either aneurysm or thoracic tumour; there is little evidence of pressure beyond the condition of the veins; and the Röntgen rays fail to demonstrate any internal lesion of the thorax. Thrombosis of the vena cava is a possible explanation, but the history does not appear to furnish any evidence of the ordinary causes of thrombosis.

CORRESPONDENCE.

UNAWARE OF PREGNANCY TILL BABY WAS BORN.

To the Editors of the "Glasgow Medical Journal."

DEAR SIRS,—A few days ago I was sent for in urgency to remove a placenta which had been retained *in utero* for a period of about three hours. The placenta gave me no trouble, but the story of the mother, who is a very respectable woman, took me by surprise. She informed me that her first baby, now sixteen months old, was still on the breast; that she did not know that she was carrying a second child; and that about an hour and a half before the baby was born she felt a little uncomfortable, but had no pain. She thought that her discomfort was due to wind, and did not for one moment suspect

anything in the shape of labour. Not until baby announced his arrival did she realise for the first time that she had been pregnant. Her husband stated that he "heard no word of anything till he saw the child." The baby was to all appearance a full-time child.—I am, &c.,

H. E. JONES.

LBROX, 3rd March, 1903.

CURRENT TOPICS.

R.A.M.C. (VOLS.) GLASGOW COMPANIES: VISIT TO GLASGOW OF SIR WM. TAYLOR, M.D., K.C.B.—On Saturday, 28th February, the Director-General of the Army Medical Services, Sir Wm. Taylor, M.D., K.C.B., K.H.P., visited Glasgow. The object of his visit was the unveiling in the Cathedral of a brass tablet, put up by the officers and men of the Glasgow Companies of the R.A.M.C. (Vols.) in memory of three members of the corps who lost their lives while serving in South Africa during the recent war.

The weather was unpropitious, the rain falling in heavy showers. There was, notwithstanding, a good turnout of the men, over 400 parading in Blythswood Square, and marching thence to the Cathedral. The nave, which had been temporarily seated, was filled by guests and the general public. The proceedings opened with prayer by Rev. Dr. Adamson, the chaplain of the corps, followed by reading from the scriptures by Rev. Dr. M'Adam Muir, of the Cathedral and 4th V.B.S.R. "The Flowers of the Forest" having been played by the pipe band, the Director-General then unveiled the tablet in the south aisle. Sir William, who was accompanied by Colonel Wilson, C.B., and Lt.-Colonel Baptie, C.M.G., then delivered a short address to the corps. In the course of his remarks he referred to his student days in the old University and in the adjoining Royal Infirmary. Lt.-Colonel Beatson, C.B., then handed over the tablet, which was accepted by Bailie Calderwood on behalf of the Lord Provost and Magistrates. The pipers rendered "Macgregor's Lament," the Very Rev. Principal Story pronounced the benediction, and the proceedings terminated with the "Last Post" sounded by the buglers.

At a meeting subsequently held, by courtesy of the officers

of the 1st V.B.H.L.I. in their drill hall, the Director-General complimented the men on their work in South Africa, and on their present efficiency and smart appearance, and urged them to continue to keep up to the high standard already attained.

In the evening, the officers of the corps entertained Sir William Taylor to dinner in the Windsor Hotel. Among the guests were Colonel Rooney, P.M.O., Scottish District, Colonel Wilson, C.B., Lt.-Colonel Baptie, V.C., C.M.G., Majors Moffet and Watson, R.A.M.C., Maryhill, Rev. Dr. M'Adam Muir, Colonel Duncan Campbell, 1st L.R.V.E., Major A. D. Moffat, H.L.I. Brigade Bearer Company, &c.

R.A.M.C. (VOLS.) GLASGOW COMPANIES.—The regiment held its annual gathering in the Queen's Rooms on Monday evening, 6th March, under the presidency of Lt.-Colonel G. T. Beatson, C.B., V.D. In addition to the distribution of prizes, which were presented by Mrs. Adamson, wife of the chaplain, the programme included music on the piano, piccolo, cornet, and bagpipes; songs, Indian club displays, Highland dancing, and a comedietta, which was performed by three members of the Athenæum Dramatic Club. There was a good attendance of members of the corps and their friends, and Lt.-Colonel Beatson was able to submit a very satisfactory report of the present position and future prospects of the Corps.

NEW PREPARATIONS, &c.

MARMITE (London: The Marmite Food Extract Co., Ltd.) is a new food preparation which is manufactured from vegetable products only. The analyses submitted to us show that it contains from 3 to 9 per cent of albumoses, 25 to 35 per cent of nitrogenous bases, 7 per cent of peptones, 24 to 27 per cent mineral matter, and from 26 to 27 per cent of water. The mineral matter includes in particular chloride of sodium, chloride of potassium, and phosphoric acid.

Marmite resembles a meat extract in composition and appearance, and is rich in stimulating nitrogenous bases. It dissolves readily in boiling water, and makes a delicious bouillon which rivals, in our opinion, any that can be prepared from the finest meat extracts. We can heartily recommend Marmite.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1902-1903.

MEETING V.—12TH DECEMBER, 1902.

The President, DR. W. G. DUN, in the Chair.

DISCUSSION ON ANÆSTHETICS.

Dr. David Lamb said—The exceptional opportunity which I have enjoyed as anæsthetist to the Victoria Infirmary during the past five years, of clinically observing and studying the effects of the various general anæsthetics, constitutes the *raison d'être* of my being privileged to introduce the subject of to-night's discussion. My remarks are based partly upon a study of the rapidly increasing literature of the subject, and partly on my personal experience of between four and five thousand administrations, the anæsthetics in these cases including nitrous oxide alone, or with air or oxygen; chloroform, ether, A.C.E. mixture, bromide of ethyl, and various sequences of these.

Nitrous oxide and oxygen, for short operations in selected cases, is a most valuable and safe anæsthetic, but for its successful administration considerable skill and experience are required. Personally, I have used it in operations varying from one to twenty-five minutes in duration, but for many reasons I would not recommend it for those lasting more than five to ten minutes unless under special circumstances. This branch of our subject, however, has been placed in the hands of Drs. Boyd and Henderson, so that I shall not enlarge further upon it.

To me it has been allotted to make some remarks upon chloroform, ether, and the various combinations of these agents, and as the time at my disposal is strictly limited, you will understand that only in a very general way can such an extensive subject be treated; for nowadays, gentlemen, even in Scotland, the question of general anæsthetics does not resolve itself into the study of a towel, tongue forceps, and a bottle of chloroform. Allow me, then, briefly to indicate the acknowledged advantages and disadvantages of these anæsthetics,

after which I shall deal with the much-disputed subject of the choice of an anæsthetic, introducing various points which lend themselves to discussion.

What, then, are the advantages of chloroform, the anæsthetic *par excellence* of the Scottish school of surgery? So far as the surgeon is concerned, the anæsthesia and general relaxation induced by it are in the majority of cases all that could be desired if the anæsthetist be inoderately skilful. There is no increased circulatory disturbance to lead to excessive or unnecessary hæmorrhage, no exaggerated respiratory movements to interfere with his procedure. Though a perfect administration requires considerable experience and undivided care and attention, yet the mere induction of passable anæsthesia is even to the unskilled comparatively simple.

Chloroform *may* be used in practically every case which may arise, and in every climate, and both it and the apparatus necessary for its use are pre-eminently simple and portable.

Taken altogether, it may be looked upon as an ideal anæsthetic, with but one main disadvantage—a disadvantage which, however, appeals powerfully to the anæsthetist and also to the patient. It is a potent drug, whose use is far from being devoid of risk, more especially in the hands of those without thorough practical training and experience. During all the stages of administration, there is a liability to sudden, and at times apparently capricious onset of dangerous symptoms, though in the hands of an experienced anæsthetist, who is always alert and in good form, who is never worn out or tired as the result of overwork, the danger can be, to a considerable extent, but never wholly discounted.

Allowing for the many fallacies to which statistics are subject, they may be admitted to have some value.

Hewitt gives the chloroform mortality as 1 in 3,000 as against 1 in 16,000 for ether.

In Dudley Buxton's book on *Anæsthetics*, published in 1892, it is stated that in the Edinburgh Royal Infirmary out of 36,500 cases in ten years only one fatality occurred.

Sir George H. B. Macleod's record is given as 15,000 cases with 1 death; Professor George Buchanan's record is given as 9,000 cases with 1 death; and Professor Macewen's record is given as 10,000 cases with 1 death.

These are the statistics which used to be brought before Glasgow students, and were such brilliant records maintained at the present day, there would be no suggestion of any anæsthetic other than chloroform; but let me quote some rather startling figures from a book just published by Dr. Luke,

instructor in anæsthetics in the Royal Infirmary, Edinburgh. Dr. Luke, who intends taking part in this discussion, will, I have no doubt, answer personally for their veracity.

"The mortality under CHCl_3 is commonly stated to be 1 in 3,200; that of ether 1 in 10,000 to 12,000 (Hewitt, &c.).

"The author, from evidence recently obtained from various sources, is forced to conclude that in certain respects these figures are wide of the mark, and that the death-rate from CHCl_3 is under-stated.

"1. In one of the largest general hospitals in the kingdom the mortality under CHCl_3 —as shown by the official report was in a recent year—rate 1 in 483 (6 deaths in 2,901 administrations).

"2. In another of almost the same size, 12 deaths occurred in 3,500 administrations (approximately), rate 1 in 292.

"3. In another general hospital, rate 1 in 202.

"4. In another large general hospital, where ether and CHCl_3 are employed to about the same extent, the mortality under CHCl_3 , taken over a period of twenty-six years, was found to be 1 in 1,300. Under ether, 1 in 9,319. The exact numbers of CHCl_3 administrations was 42,978, and ether 37,277.¹

"5. In Boston City Hospital, since the introduction of ether, over 25,000 operations have been performed under this anæsthetic without a single death due to the anæsthetic alone being recorded. In Massachusetts General Hospital, since 1846, 35,000 patients have been anæsthetised with ether with as good results.

"6. In 1897, 96 deaths in all were recorded in the British Isles" [*should be England alone.*—D. L.] "as due to anæsthetics—in hospital and private practice. In 74 of these chloroform alone was used. In 10 of these a mixture of CHCl_3 and ether. In 12 of these ether or N_2O and ether.

"I have before me details of the exact manner in which death occurred in these cases, the duration of the operation, its nature, and the amount of the anæsthetic given.

"Making every allowance for the relative frequency of employment of CHCl_3 and ether; for the nature of the operations in which CHCl_3 is used in preference to ether, and for the skill of the administrator, can any one fail to conclude that ether is the safer anæsthetic, and that *wherever possible* it should be employed in preference to chloroform, either alone or mixed with a lesser proportion of CHCl_3 ?"

Personally, I agree with Dr. Luke in believing that the chloroform mortality is usually under-estimated.

¹ See Roger Williams, *Lancet*, 31st May, 1902.

The report of the Anæsthetics Committee of the British Medical Association, published in 1900, and based on 26,000 cases, concludes that chloroform is about seven times more dangerous than ether.

Whilst on the subject of the danger of chloroform, allow me simply to mention the general opinion regarding the anæsthetic in obstetric cases and in children.

In obstetric cases chloroform is generally admitted to be a comparatively safe anæsthetic, certainly more so than in ordinary surgical work. So long as it is used merely to annul the ordinary pain of labour, it may be said to be absolutely safe, but when once we enter the region of operative midwifery, the ordinary risks of overdosing must not in any degree be disregarded. The comparative infrequency of dangerous symptoms is, I think, partly explained by the fact that in the majority of these cases women are not brought very deeply under the influence of the anæsthetic, and thus the risk from overdose is comparatively slight. The early chloroform risk also is diminished by the fact that such patients have no fear of chloroform; they take it readily and breathe freely, and there is no holding of the breath and consequent locking up of chloroform in the lungs. But difficulties do occur, and fatalities have been recorded.

Chloroform, again, is generally considered the best anæsthetic for children. It is certainly the most convenient, but it is a mistake to look upon it as devoid of danger. When, however, difficulties do arise, prompt treatment is more frequently successful than with adults, the result probably of the greater proportionate vitality of children, the greater elasticity of the chest walls allowing of more effective artificial respiration, and also, to some extent, due to the absence of complicating pathological conditions, such as fatty heart, emphysema, aortic mischief, &c.

Deaths from chloroform, though occurring in all classes of cases, are appallingly frequent in strong and robust persons, and in cases in which the operative procedure is comparatively trivial. Whether deaths in more serious cases are put down to some cause other than the anæsthetic, or this predilection for such cases is due to the fact that it is this class which falls most frequently into the hands of the inexperienced, or that less care is taken in the preparation of the patient or administration of the anæsthetic, or that the patients are not deeply anæsthetised and deaths result from reflex shock, it is difficult to decide, but the fact remains that such is the case, and that such deaths are rapidly on the increase.

Of 210 deaths from chloroform, noted in Hewitt's book, over 150 occurred in minor—some of them very minor cases—dislocations, 16; straightening joints, 7; examination of injuries, 9; application of escharotics, 8; rectal or genito-urinary cases, 40; opening abscesses, 7; removal of toe-nails, 5; extraction of teeth, 18; &c.

Chloroform I prefer to give on an open mask (Schimmelbusch's) or the corner or border of a towel; Junker's apparatus, either with a tube or with a gag and tube combined, being reserved for cases about the face and throat. Junker's apparatus certainly diminishes slightly the risk of overdose, limiting, as it does, the supply of the anæsthetic, but it demands too much attention—attention better bestowed on the patient, and, in addition, the dose of any anæsthetic must be based upon the general effects on each patient, and not on any preconceived fixed quantity.

The physiological action of chloroform is a subject for expert physiologists. Suffice it to say that the methods of the Hyderabad Commission are now proved to have been faulty, and their results, so far as the action of chloroform on the heart is concerned, erroneous. An excellent *résumé* of this aspect of the subject can be obtained in the latest edition of Hewitt's book on anæsthetics, and I would also refer you to Dr. Embley's paper in the *British Medical Journal*, April, 1902. To those who say watch the respiration, never mind the pulse, I would reply that I have notes of several cases in which, by watching the pulse, I have myself received warning, or have been able to warn the house surgeon, who was administering the chloroform, of imminent danger, when there was absolutely no apparent interference with respiration or indication of its failure, which very soon became only too evident.

This want of safety, then, is one of the main disadvantages of chloroform, and as the safety of the patient should always be our first aim, we are at least justified in giving attention to other agents for the production of general anæsthesia.

Ether, the favourite anæsthetic in England and many parts of America, &c., has been, as before indicated, proved to be safer than chloroform. In the figures given, no account is taken of many lives saved by the stimulant effects of ether in formidable operations, or of the fact that many of the deaths ascribed to it occur in moribund patients, for whom, even amongst some enthusiastic chloroformists, ether is usually reserved. It is, I think, universally admitted that the safety-zone with ether is much broader than with chloroform, and even when respiratory failure does take place the circulation

is so maintained as to allow of a much longer time for the application of restorative measures. Why, then, is it not universally employed? Unfortunately, it also has its disadvantages. Exclusion of air sufficient to give rise to duski-ness or even lividity is essential during the initial stages of its administration, though later on these symptoms should be wholly absent. This, along with the distinctly irritating nature of its vapour, renders it from the patient's point of view distinctly unpleasant, and to a surgeon accustomed to chloroform the *initial* rapid breathing, lividity, tendency to spasm, and excessive mucus, seem very objectionable. Some of these drawbacks, however, are to a great extent eliminated by the induction of anæsthesia with nitrous oxide or chloroform, or some mixture of chloroform and ether, and continuance with ether alone, when, as usual during surgical anæsthesia with ether, respiration should be comparatively quiet and easy, colour and pulse good, with little risk of cardiac or respiratory failure. Were this not so, it would be impossible for surgeons such as Mayo Robson, Treves, Lane, &c., to perform all kinds of abdominal and other operations under its influence.

Again, it is not a satisfactory anæsthetic in tropical climates, and its use also is contra-indicated in certain classes of cases. Thus, in a general way, it is contra-indicated (Rowell)—

I. *By the patient's condition*, whenever there is—

1. Dyspnœa, from whatever cause due it may be—(a) To heart, lung, or visceral disease; (b) to pressure on trachea (thyroid); (c) to intralaryngeal growth; (d) to peculiarities about the upper air-passages, obvious it may be only under the anæsthetic (large tonsils or epiglottis).

2. Acute or subacute bronchitis, phthisis.

3. Cardiac cases, especially those with an A.S. murmur.

4. Atheroma.

5. Extreme obesity.

In such cases it is best to begin with A.C.E. or C.E. mixture, and then be guided by patient's symptoms as to whether you continue with this anæsthetic or change to chloroform, or in some cases ether.

Again, it is contra-indicated—

II. *By the surgeon's requirements* in the following cases—

1. Operations on the mouth, nose, jaws, throat, larynx, &c.

2. To avoid cardiac congestion in deep neck and cerebral operation.

3. To avoid rigidity in some patients in abdominal surgery and in reduction of dislocations.

In such cases, though, you may with advantage begin with ether or the mixture, and then change to chloroform.

In normal labour, as before indicated, it is unnecessary.

So far as bronchitis and pneumonia are concerned, there is perhaps a slightly greater tendency to these complications with ether than with chloroform, but nowadays, with purer ether and a moderately skilful administration and general precautions, this danger can be reduced to a minimum, and in but few cases can the anæsthetic be proved to be the sole cause. The rare occasions in which these conditions arise, occur usually after prolonged abdominal operations or breast cases in which there has been prolonged exposure, possibly in an improperly heated operating room, or the patient has been chilled with wet towels or passage through cold corridors. After short operations, such as dental cases, it may result from a too early exposure to the open air. This subject need hardly be pursued further—the mere fact that so many surgeons who have both the interests of their patients and their own records at heart prefer ether is answer sufficient.

From my personal knowledge of some post-operative pneumonias at the Victoria Infirmary, I could, I think, by shutting my eyes to other possible causes, frame a fairly strong indictment against chloroform as being more frequently in association as the anæsthetic than ether. As indicated in an article by Mayo in the *Annals of Surgery* for August, there is in stomach cases a special tendency to this complication, but it is an interesting fact that as many cases relatively occur in gastric operations in which cocaine is the anæsthetic, as in those in which there is general anæsthesia.

After-sickness, also, though probably more frequent than with chloroform, is, as a rule, of shorter duration, and the unpleasant after-taste can be mitigated in several ways.

Admitting, however, that the general practitioner, who may require to make use of a general anæsthetic but rarely, has not the opportunity of acquiring skill and experience in the administration of ether, what then? Must he fall back on chloroform? Not necessarily.

Were it possible to combine the advantages of both chloroform and ether with a minimum of their disadvantages, we should have practically an ideal anæsthetic. A mixture of these agents hardly provides us with this ideal, but it certainly has many attractive qualities, and is recognised by most anæsthetists as by far the best anæsthetic in what are generally recognised as bad cases, such as emphysematous and chronic bronchitic patients, dyspnoea cases, and those with

cardiac disease—whether fatty, valvular, or otherwise—corpulent flabby patients, &c.

My personal experience corroborates this, but I would go further and say that even for routine use it is a more safe, and, if I might so express myself, a more comfortable anæsthetic than chloroform; and even in comparatively inexperienced hands much less difficulty is encountered in the induction and maintenance of anæsthesia by it than by ether.

The principal objection preferred against it is the uncertainty as to what you are giving—chloroform or ether, and how much of each. This is no real objection practically, so long as you remember that you are giving chloroform diluted with a slightly variable proportion of ether, and you regulate your dosage as in the administration of all other anæsthetics, not by stated quantities, but by careful observation of the effects produced. There is always some ether present, evidenced clinically by the smell and the stimulant effect, and proved experimentally by Smiles and Trunian, who showed that, even to the end of evaporation, the ether and chloroform remained combined, though certainly more ether is given off at first, and less in proportion later.

Little apparatus is required for its use—this celluloid modification of Rendle's mask, containing a loosely packed sponge, wrung out of warm water—and the administration is almost as easy and simple as that of chloroform, though the period of induction of anæsthesia may sometimes be a minute or two longer. To many patients the odour is as pleasant as that of chloroform, if not more so, and the excitement stage is distinctly less evident than with chloroform. The respiration is, as a rule, moderately deep, regular, and distinctly audible, and one is better able to estimate the degree of anæsthesia of the patient at any particular moment than with chloroform.

Occasionally with this, as with other anæsthetics, there is early in the administration persistent abdominal rigidity, which may call forth comments from the surgeon. If in any operations, but more especially those connected with the abdomen or pelvis, manipulations are begun before the patient is thoroughly anæsthetised, reflex rigidity and other troublesome symptoms are set up; and it is only with great difficulty and sometimes danger that they can be subdued. To avoid this, no surgeon or nurse should, in these cases at least, lay a hand on the patient until deep anæsthesia is well established, and if, in spite of precautions, rigidity tends to occur and persist, more time and not dangerous quantities of chloroform should be the treatment.

So far as after-sickness and bronchitis are concerned, there is little to choose between it and chloroform pure. My impression is that sickness is less with the mixture. Sickness *during* the administration of any anæsthetic can rarely be blamed on the anæsthetic, but *almost* invariably on the administration, or it may be the preparation of the patient.

In answer to those who have given the mixture one or two trials, and who say that profound anæsthesia cannot be maintained by its use, I may reply that I have records of almost every possible operation in which absolutely satisfactory anæsthesia has been maintained by its use, but even should there be any such difficulty, it is simplicity itself to give a whiff of chloroform. Such a mixture cannot, perhaps, boast the same degree of immediate safety as ether, for dangerous symptoms and fatalities occasionally occur; but in this respect, as in most others, it occupies a position intermediate between chloroform and ether.

In the Birmingham and Midland Hospital for Women, in which the chloroform (1) ether (2) mixture is used almost exclusively, they had 14,000 cases with 1 death directly due to the anæsthetic, and according to Haenkel, German statistics for 1890-97, collected from scores of thousands of cases, give the death-rates in the following proportions:—Chloroform, 1 in 2,039; ether, 1 in 5,090; ether and chloroform, 1 in 7,594.

Mr. Lawson Tait, with an extensive experience of all anæsthetics, says, "A mixture—2 of ether and 1 of chloroform—I believe is the best of anæsthetics, save in old age and damaged kidneys, for all kinds of work" (M'Cardie).

Finally, then, gentlemen, so far as the choice of an anæsthetic is concerned, the position I take up is this.

If all the requirements of ideal anæsthesia—and these include the safety and comfort of the patient, the requirements of the operating surgeon, the peace of mind of the anæsthetist, and as nearly as possible an uninterrupted anæsthesia—if all these are to be ensured in every case by one and the same anæsthetic, we have yet to find that drug. The question will never be decided by asseverating that chloroform or ether, or any combination of these, is the best. Any attempt to do so carries us back to the earlier days of anæsthesia, and will simply result in the formation of factions, each in favour of the anæsthetic to which it is most accustomed; for a man will certainly get better results with an agent with which he is familiar than with one he knows little about, though this does not prove that the former is the better of the two.

No, gentlemen, so far as the requirements of ideal anæsthesia

are concerned, by far the best results are to be obtained, not by a slavish adherence to one or other anæsthetic, but by a careful selection based upon a recognition of the special advantages of each for the individual patient and for the operative procedure, and also by a change from one to another when indicated by the occurrence of special difficulty during the progress of the operation.

"This," you say, "means another specialty. What is to be left to the general practitioner?" That is not necessarily the case, but even if it were, why not? In the great majority of operative procedures, the anæsthetic, involving as it always does some degree of risk to life, is certainly as important as the operation, and in very many cases it is much more so. The danger is not to be reckoned only by the number of actual fatalities, but also by the number of cases snatched from death by prompt remedial measures. The experienced surgeon or anæsthetist, inured as he is to trying and exciting moments, can retain his presence of mind and do the right thing at the right moment, but what of his less hardened and less experienced juniors?

No, specialism is not an absolute necessity, but I certainly think that men are not in touch with present-day opinions when they start on their careers with the firmly-rooted belief that chloroform is the only anæsthetic worthy of the name, and that ether is a nasty, messy, irritating agent, with which anæsthesia is imperfect, and whose use is as often as not followed by bronchitis, pneumonia, collapse, and œdema of the brain. I am not prejudiced against chloroform. I consider it our most valuable anæsthetic, and were we restricted to one, I think it is the one which we could least do without.

Prolonged administration of nitrous oxide with air or oxygen, and ether preceded by nitrous oxide, for the patient the pleasantest, and in selected cases the safest anæsthetics, may perhaps be left in the hands of specialists on account of the skill and apparatus required for their use.

Ether, administered by means of a Clover, Hewitt, or similar apparatus, from beginning to end of an operation is unpleasant for the patient, inadvisable or inadmissible in many cases as before indicated, and it also requires a considerable degree of skill in its administration to secure the best results, more especially in the initial stages. This period also does not appeal to one accustomed to chloroform, but the use of chloroform diluted with an effective proportion of ether is simple as that of chloroform alone, and with a little experience gives excellent results.

My experience with these mixtures has been principally with A.C.E. (one part of alcohol, two of chloroform, and three of ether), but you may leave out the alcohol altogether, or replace it with an equal quantity of ether, thus forming the C_2E_3 or C.E. mixture, and the C_1E_2 mixture, the latter slightly weaker than the former. The two latter mixtures are said to be equally effective, and I intend using them, on the score of greater simplicity, more freely in the future. The alcohol in the A.C.E. mixture, besides acting as a diluent, was supposed to aid the more thorough admixture of the others, but according to Hewitt and others, the advantage of its presence is doubtful, and it is perhaps an additional cause of after-effects; besides, nothing can be simpler than to have a bottle of chloroform and one of ether in your bag, and to mix up your anæsthetic as you require it, thus making sure of the presence of both agents.

By means of such a combination you can, to a great extent, counteract the undoubted depressing effect of chloroform on the heart and respiration, and in addition the power of the anæsthetic at your disposal is limited, and there is in consequence less risk of an overdose.

Again, nothing is simpler than—if you prefer ether, or there are indications for such a change—to substitute an Ormsby's inhaler; or if the case is a prolonged one, or there is persistent abdominal rigidity, &c., to substitute chloroform on its appropriate mask. The stimulant effect of the ether already given in mixture is always an advantage.

Such, in a general way, has been my practice at the Victoria Infirmary, and I think that in the four and a half years since its introduction it has been justified by the results. In that time—and in the Victoria Infirmary that means about 4,000 administrations—there have been only two fatalities into which the question of the anæsthetic could possibly enter. Both occurred during the night in the hands of house surgeons, and in emergency cases, both in patients with intestinal obstruction and stercoraceous vomiting. One, in which chloroform followed by A.C.E. was used, occurred at the end of a long and trying operation, and was the result of shock from operation more than from the effect of the anæsthetic. The other took place much earlier, soon after the abdomen was opened, and though the patient was old, collapsed, and very ill, the anæsthetic (chloroform) had probably a distinctly closer connection with the fatal result than in the former case.

But, gentlemen, I confidently leave you to adjudge the value to be ascribed to these cases—one of them, remember, with

chloroform; and I close my remarks by stating that, whilst even with our free use of ether alone or in combination, we have had at times our scares and very occasional artificial respirations, yet in the infirmary, during the time I have indicated, there has not been a single death in the early period of anæsthesia—notoriously the most dangerous stage with chloroform alone—nor, indeed, has there been a single fatality which could for a moment be looked upon as due wholly to an anæsthetic.

Dr. Boyd said—I have been requested to discuss the method of the induction of anæsthesia by the administration of nitrous oxide gas.

Nitrous oxide, until within comparatively recent years, was always given alone with strict exclusion of air. For short operations it proved extremely useful, but the chief objection to it is that given in this way the patient readily becomes cyanosed, and stertor and rigidity induced, so that operative procedure becomes difficult under these circumstances.

Nowadays the majority of anæsthetists employing the gas find much better results are obtainable by combining it either with oxygen or with air. I have for some years employed the combination of nitrous oxide with regulated percentages of oxygen. This combination has the advantage of producing more tranquil anæsthesia, lasting longer, and unattended with the phenomena of asphyxia. Also, when the operation is not in the immediate neighbourhood of the mouth, we can give the combined gases continuously till the operation is complete. The apparatus I have employed is that devised by *Dr. Hewitt*, made for him by *Messrs. Barth*, of London. It consists of two nitrous oxide cylinders, one oxygen cylinder, a combined stand and union, double indiarubber tubes (one running inside the other) for conducting the two gases from the cylinders to the bags, two indiarubber bags joined together by a septum common to both, a combined regulating stopcock and mixing chamber, and a face-piece. Patients require no special preparation, but it lessens the chance of sickness if no food be taken for three or four hours previous to the taking of the gas. The bladder should be empty, and all clothing should be loose.

The bags (oxygen and nitrous oxide) having been half filled with their respective gases, the face-piece is applied, the patient usually being in the sitting posture.

The patient, unless a child, should be told to breathe freely as soon as the face-piece, with the indicator pointing to "air,"

is put on. The valves should be heard acting, as otherwise the face-piece is not fitting accurately. The indicator is turned to 2, that is the patient is now breathing nitrous oxide with 2 per cent of oxygen. The foot-key of the nitrous oxide cylinder should be turned on slightly so as to replace the nitrous oxide which is inhaled by the patient. At first the oxygen is increased slowly. In young children and feeble adults the amount of oxygen can be quickly increased till after the first forty seconds 7 to 10 per cent of oxygen is given. A strong healthy adult rarely requires more than 5 or 6 per cent. We have to guard against the giving of too much or too little oxygen—if too much oxygen be given, we get mental and muscular excitement; whereas, if too little be given, then lividity, stertor, and muscular twitchings result. Anæsthesia is induced in less than two minutes as a rule. The signs of anæsthesia being fully established are the *loss of conjunctival reflex, breathing regular or slightly snoring in character, and flaccidity of the extremities.*

As a rule, the average duration of the anæsthetic stage is about forty-four seconds, but in many cases a much longer period may be obtained. The other method of giving nitrous oxide combined with air I shall say little about, for my experience is so limited that I would rather leave this form of anæsthesia to be discussed by Dr. Henderson, who has been using it successfully for some time back. I have found that the anæsthesia produced by this method is extremely satisfactory, though there is a greater tendency to lividity than when oxygen is combined with the gas. Certainly, the duration of the anæsthetic stage is quite as long as, if not longer than with oxygen.

As regards the uses of nitrous oxide, I believe we have in it for *short* operations the best anæsthetic that can be employed. The fact that it is unattended with *any risk to life* is perhaps its chief claim to employment, but the rapidity of anæsthesia and the almost invariable absence of after-effects also ought to be taken into account. In dental practice nitrous oxide is universally employed, but for many other minor surgical affections it can, I think, be advantageously used—thus, removing in-growing toe-nails, opening abscesses, bending stiff joints, setting fractures, removal of tonsils and adenoids, scraping diseased tissues, &c.—in fact, any operation in which a short period of anæsthesia, say anything between five and ten minutes only, is required. Under certain conditions nitrous oxide and oxygen may be given for comparatively long operations—thus, amputations and excisions of

joints have been performed while patients were under its influence. Some years ago I kept a patient under it for thirty-five minutes while a tumour of the breast was excised. I cannot, however, believe that for long operations nitrous oxide will ever come into general use, because it is impossible to be sure of effecting quiet and effective anæsthesia.

Dr. Gray said—The subject which has been allotted to me for introduction is that of local anæsthesia. Obviously a limit must first be appointed, otherwise the discussion will get beyond control and lose what value it might otherwise have. It may, therefore, be understood that the subject is to be looked at from a practical point of view so far as possible, since the physiological aspects are so extensive.

For the purposes of operation local anæsthesia must, in the great majority of cases, be looked upon as a makeshift. In a few cases the surgeon may be assisted by consciousness on the part of the patient, as in some operations upon the eye. But for the most part the patient would rather not be aware of what is being done, even though he may be absolutely unconscious of pain. In view of the fact, however, that all general anæsthetics at present in use have some drawback, either on account of danger, of discomfort, or brevity of the period of unconsciousness, local anæsthesia continues to hold its place, and apparently will do for some time.

Probably the anæsthetic in most general use is cocaine. This alkaloid may be applied on a mucous or cutaneous surface, or injected. Its application to an unbroken cutaneous surface may, with one exception, be pronounced inadvisable. Perhaps to many this statement may appear superfluous, but when one sees it repeatedly stated in print that anæsthesia may be obtained by painting a solution of the drug upon the skin, a direct counter-statement is not amiss. I have never seen a normal skin rendered anæsthetic by painting with cocaine. The reason of this is that alkaloids are not absorbed by the skin even when the vehicle which contains them is absorbed.¹ The only exception I know to this rule is in the case of the tympanic membrane.

On mucous surfaces, cocaine exercises a powerful anæsthetic effect, and its power of contracting the blood-vessels enhances its value in these cases. It is usually dissolved in water for these purposes, water being, perhaps, the worst vehicle for it. To get the full anæsthetic value of cocaine, the mucous surface should be, so far as possible, dried, and then the salt applied

¹ Cushing, second edition, p. 32.

as a 10 per cent or even 20 per cent solution in rectified spirit, or, better still, in equal parts of anilin and rectified spirit. A dose of 10 mm. should be applied in order to prevent any toxic symptoms either from the cocaine or the anilin. This solution is not suitable for ophthalmic purposes; on the other hand, it is the only solution which will produce anæsthesia of the tympanic membrane without causing more or less destruction of the tissues.

Watery solutions of cocaine should never be introduced into the ear. For if the membrane is not perforated they have no effect, and if it is perforated, they may pass by dialysis through the labyrinthine fenestræ, and cause very severe symptoms of giddiness, vomiting, rolling movements of the head, &c., lasting for hours. This is due to the paralysing effect of the drug upon the maculæ and cristæ acusticæ. This danger is avoided by using the anilin solution, since dialysis hardly then occurs.

According to some authorities, the anæsthetic effect of cocaine upon the mucous membranes is increased by a previous application of adrenalin chloride. I have tried this method in several cases, but could not find that the anæsthesia was very different in degree from that obtained by the watery solution alone, and is certainly inferior to that produced by the anilin and spirit solution of the drug. This is particularly noticeable in the case of excision of the tonsils, in which the watery solution, even supplemented by the application of adrenalin chloride, only diminishes the pain to an insignificant extent, whereas, with the help of the anilin solution referred to, the pain is slight.

Several substances have been introduced as substitutes for cocaine, the poisonous properties of the natural alkaloid being, of course, its great drawback. These have nearly all been obtained synthetically, and although none of them are as useful as cocaine, the fact that they can be prepared synthetically is a good omen, and it is probable that at no distant date a really valuable local anæsthetic will be found to replace the natural product, and one which will not lend itself to mercenary projects as does the latter.

Of these substitutes I can only speak of eucaine. This alkaloid is present in two forms, alpha-eucaine and beta-eucaine. Both are less poisonous than cocaine, but in spite of the statements to the contrary, I must say that I have found both to be much more irritating and less anæsthetic. Furthermore, neither of them produces that contraction of the blood-vessels which in many cases is a valuable feature of cocaine

anæsthesia. It must be admitted, on the other hand, that there is no subsequent paralysis of the arteries, and therefore no fear of hæmorrhage. On the general circulation cocaine at first produces an increase of blood-pressure, while eucaïne has the reverse effect.

In recent years the value of cocaine as a local anæsthetic has been extended by the method introduced by Schleich. Relatively large quantities of a very dilute solution of cocaine and morphia are slowly introduced hypodermically until the surrounding tissues are swollen up with the fluid.

Personally, I have had no experience of this method, and am not therefore in a position to express an opinion as to its value. It has been used several times, however, to my knowledge in Glasgow, and a description of a case operated on in this way was given to this Society by Dr. Rutherford some years ago.

Yet another method of using cocaine has more recently been introduced. It consists of injecting a dilute solution beneath the dura mater of the spinal cord. This method is still on its trial. The anæsthesia obtained in this way extends over the lower part of the chest, the whole of the abdomen, and the lower limbs. It is by no means free from danger, and the injection is followed by an extremely severe headache of several days' duration.

In conclusion, I would like to make a few remarks upon the subject of cocaine intoxication or poisoning. It is not uncommon when applying the drug, even in small doses, to a mucous surface, to find that the patient complains of faintness and other symptoms of collapse. These usually pass off very quickly if the patient be put in the recumbent position and a little alcohol be administered.

In more severe cases, convulsions may occur, and the pulse, instead of being fast, becomes slow and weak, the same being true of the respiratory movements.

The slighter symptoms are due, I think, not to a really large dose of the drug, but to a rapid absorption of an ordinary dose. This may readily be understood when we remember that the action of cocaine on the arteries is to contract them. Thus, if all the arteries in the body are suddenly contracted, and the blood-pressure instantly raised, the heart is, as it were, taken unawares. On the other hand, if the contraction of the arteries comes about gradually, the heart has time to accommodate itself to the new conditions, and symptoms do not occur. In order, therefore, to prevent these symptoms, it is advisable to use a solvent for the alkaloid, such as anilin, which,

though to a certain extent miscible with water, will not diffuse rapidly through the walls of the capillaries and lead to too rapid absorption.

Should symptoms of cocaine poisoning occur, the antidote theoretically is nitrite of amyl; that most commonly employed, however, is brandy. In any case the patient should be laid in the horizontal position, with the head low.

I leave the discussion of other local anæsthetics, such as chloride of ethyl, ether spray, holocaine, topococaine, &c., to those who, having experience of them, have a better right than myself to speak of their merits or demerits.

Dr. A. Brown Kelly said—Bromide of ethyl, to which I would now direct your attention, is one of a number of preparations that have recently been introduced or reintroduced for the production of brief anæsthesia. It is the only one of this class with which I am practically acquainted, but judging from reports on the others, it is not surpassed by any of them in efficacy or safety.

The position of bromide of ethyl as an anæsthetic is between chloroform, ether, and the various mixtures of these agents on the one hand, and nitrous oxide on the other. Its effects are transient, but less so than those of gas and oxygen, and while not possessing the absolute safety of this mixture, it is much less dangerous than chloroform. It is, therefore, suitable for operations of short duration, which hardly justify the administration of chloroform if the death-rate of the latter in minor surgery be kept in view.

Several years ago I was led to try bromide of ethyl in dispensary work, partly owing to the large number of cases requiring an anæsthetic, and partly because of the unfavourable conditions under which I was then placed for administering chloroform. During the interval that has since elapsed I have used bromide of ethyl in over 1,300 cases, without accident, and even without anxiety excepting for a few moments on three or four occasions, and, when compared with chloroform, with an immense saving of time and trouble.

Let me first say a few words as to the drug itself. It is of importance to obtain a good preparation, as certain of the impurities that may be present are said to add an element of risk to the anæsthesia.

In the past I have frequently had to return the bromide of ethyl supplied owing to its being unfit for administration, but henceforward there should be less trouble in this respect.

Messrs. Duncan & Flockhart having investigated the methods of manufacturing bromide of ethyl, are now placing a pure preparation in the market, and other chemists will doubtless follow their example if a demand for the drug arise. I cannot here enter into the nature of the impurities or their modes of detection, but anyone interested may find information on the subject in the *British Medical Journal* of 30th August, 1902.

The patient should be prepared as for chloroform, and at the time of operation the stomach and bladder should be empty, and the garments loose.

The administration may be made with the patient either lying or sitting.

Everything being in readiness a suitable dose is measured out. On an average I give to patients under 12 years of age $1\frac{1}{2}$ to 2 drachms, and to those older $2\frac{1}{2}$ to $3\frac{1}{2}$ drachms. Less of the drug is needed for puny, delicate subjects; more, for those that are strong, excitable, and obstreperous.

No mask is required, merely a piece of lint folded into three like a sheet of notepaper, and of a size to comfortably cover the patient's nose and mouth. By using three folds of lint only a very limited supply of fresh air gains admission, but enough to prevent asphyxiation.

The whole dose is poured upon the lint, which is then applied to the patient's face in such a way as to prevent the entrance of air at the sides. This precaution must be carefully observed throughout the administration, otherwise anæsthesia will be delayed or even unobtainable. Medical friends have told me of patients whom they had failed to render insensible. In these instances the fault was almost certainly due to want of attention to the rule I have just stated. Personally, I have met with no such case. Another mistaken proceeding which delays anæsthesia is the raising of the cloth to allow the patient a breath of fresh air; only under exceptional circumstances, which will be referred to immediately, is this necessary or advisable during the administration.

The patient is told to breathe deeply and regularly. Adults usually do as requested. In children, on the other hand, after the first two or three inspirations there is often a period of excitement and struggling, during which restraint is necessary. Stertor sets in as a rule—if the breathing has been normal—in about sixty seconds in children, and somewhat later in adults. The patient is then ready for operation. In order to prolong the period of anæsthesia, however, I keep on the cloth for ten seconds longer in children, and for twenty to thirty seconds longer in adults. The duration of the administration

is, therefore, on an average, seventy seconds in children of from 6 to 12 years of age, and less in those younger; and in adults it varies from about one and a half to two minutes.

Such is the normal sequence of events. Very often, however, especially in children, the breathing is irregular. This may be voluntary, due to the patient holding the breath, or involuntary, owing to the tongue slipping back in the mouth. In neither case should the lint be removed if possible; efforts should rather be made to facilitate respiration by stretching the neck, pushing the lower jaw forward, and pressing the tongue downwards and forwards with a tongue depressor. If, however, apnoea seems to be too protracted, the cloth should be raised for a moment, when the patient usually at once takes a deep inspiration, and then goes on breathing regularly even after the anæsthetic is reapplied. It should be remembered that a single inspiration of fresh air lengthens the time required to produce anæsthesia, and that if several be taken an additional dose of the drug will be needed. It is, therefore, advisable to raise the cloth only when unavoidable, and for as short a period as possible.

Amongst the other manifestations observed during the administration are:—Congestion, and sometimes duskiness of the face; injection of the conjunctiva, and dilatation of the pupils; contraction of various groups of muscles, occasionally opisthotonos; and slight acceleration of the pulse with lowering of tension.

I have been repeatedly told by medical men of the unfavourable impression they had received of bromide of ethyl when witnessing its administration for the first time. This can hardly be otherwise, for in giving this drug the principal rules governing the use of chloroform are transgressed, and the production of anæsthesia being associated with stertor, a dusky visage, and dilated pupils naturally alarms one who views these manifestations from the standpoint of chloroform.

As has been already stated, the chief sign indicating anæsthesia is the onset of stertorous breathing. Occasionally, however, there is no stertor, and it is then more difficult to decide as to when the administration should be stopped. Sometimes, instead of being stertorous, the breathing is merely deep and regular, and when this is associated with the absence of all voluntary movement, flaccidity of the limbs, and abolition of the corneal reflex, narcosis may be regarded as complete. One also receives assistance from noting the duration of the administration.

An additional dose—1 to 2 drachms, according to the age—

should be given if the patient has been inhaling the drug for ninety seconds or longer, and still manifests none of the signs mentioned of approaching anæsthesia. In such cases the administration, as a rule, has been faulty, most probably owing to the too free admission of air.

The duration of anæsthesia varies. If the method described is followed, and if the breathing is stertorous for ten seconds before removing the cloth, insensibility lasts on an average one minute and a half in well grown children, much longer in children under 5 years of age, and shorter in adults. A lengthened period of anæsthesia may be obtained by administering a fresh dose of the drug when the patient shows signs of awakening, but the reapplication must not be made oftener than twice or thrice. Personally, I restrict the use of bromide of ethyl to those cases in which a single application suffices; if longer narcosis is required, I prefer another anæsthetic.

On regaining consciousness, the patient is at once able to rise and walk. The only after-effect of any importance is vomiting, which has occurred in my practice in about 56 per cent of the administrations; half of these I would attribute, however, to the swallowing of blood. As a rule, the vomiting is not troublesome, and only rarely has it approached in severity and duration that following chloroform anæsthesia. It should be mentioned that the breath sometimes for one or two days afterwards has an odour of garlic. I have never observed an inflammatory affection of the air-passages follow the inhalation of bromide of ethyl.

The mortality from bromide of ethyl anæsthesia, according to the statistics of the German Surgical Congress (1890-1897) is 1 in 5,228 administrations.

Hankel has tabulated twenty-one deaths, the following being the causes assigned:—

1. Mistaking the highly poisonous bromide of ethylene for bromide of ethyl.
2. Using impure preparations of bromide of ethyl.
3. Severe gastro-intestinal irritation due to prolonged administration.
4. Asphyxia.
5. Syncope.

We need only consider asphyxia and syncope. The experimental and physiological observations upon this anæsthetic in relation to these two conditions have proved the following facts:—First, that cardiac failure is always preceded by cessation of respiration; second, that there is no tendency to spasm of the glottis or sudden stoppage of respiration; and, third, that

in prolonged narcosis in animals the breathing *gradually* diminishes in frequency and amplitude, and even when arrested it can be re-established if the dose absorbed is not too great. Theoretically, then, bromide of ethyl should never cause death by asphyxia or syncope, for syncope is always preceded by asphyxia, and asphyxia being of gradual onset can be prevented. Unfortunately, however, practice and theory do not agree in this matter. The four recorded cases of death from syncope, and my own experiences, would seem to indicate that if a fatality under bromide of ethyl take place, it will most likely be due to syncope, and will occur without warning. I would advise, nevertheless, that the entire attention be devoted to the respiration throughout the administration.

Although one can speak only in qualified terms of the safety of bromide of ethyl, this drug, when compared with chloroform, is certainly very much the safer in throat work. So far as I can learn, only one death has followed the use of bromide of ethyl in the operation for the removal of tonsils and adenoids. On the other hand, Chaldecott, in a recent number of the *Lancet*, states that he has collected a list of over fifty recorded deaths under chloroform given for this operation. But even were a death to occur in my practice—a possibility of which I never lose sight—I consider that the good services rendered me in the past by bromide of ethyl would fully warrant my continuing its use.

As a time-saving agent it is invaluable in dispensary practice. In support of this I need merely state that recently several medical friends and I operated upon thirteen patients under bromide of ethyl for enlarged tonsils, adenoids, or both, and without hurrying took only an hour and a quarter.

Let me now briefly sum up the advantages of bromide of ethyl. No special apparatus is needed for its administration, narcosis is rapidly produced, the vapour does not irritate the respiratory tract, the upright position of the patient is permissible, there is quick return to consciousness, the only troublesome after-effect is vomiting, which is rarely severe, and the danger is but slight.

On the other hand, the period of anæsthesia is brief, and it is advisable, therefore, to know beforehand how much has to be done, and whenever the administration is stopped, to operate without loss of time.

While feeling the responsibility of recommending what in this city is a comparatively unknown anæsthetic, I trust, if I have succeeded in showing that it is safe, convenient, and easily administered, that those who have not yet tried bromide

of ethyl will feel induced to do so when suitable opportunities arise.

Dr. W. L. Reid said that, while agreeing in the main with *Dr. Lamb's* views on chloroform, he took exception to his statement that it was as dangerous to the parturient as to the average woman, if pushed to the surgical degree. He (*Dr. Reid*) thought that in the case of a woman in labour chloroform was less dangerous for three reasons—

Firstly, because of her recumbent position, but this is common to cases in general in which surgical anæsthesia is induced.

Secondly, because, even with surgical anæsthesia, the action of the uterus is by no means completely annulled, and so blood is, at intervals, forced freely towards the brain.

Thirdly, the hypertrophic condition of the heart, especially of its left ventricle, present in a woman at the full term of pregnancy, prevents it from giving way functionally as readily as in the ordinary patient.

Experience seems to support this contention, as in the course of a long and tolerably varied experience he had never seen or known of a woman dying in or immediately after labour while under the influence of chloroform. He thought that no one would argue from this, that, even in these circumstances, chloroform should be given recklessly.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1902-1903.

MEETING III.—8TH DECEMBER, 1902.

The President, MR. A. E. MAYLARD, in the Chair.

I.—CASES OF CARCINOMA OF THE BREAST TREATED BY X-RAYS AND THYROID EXTRACT.

SHOWN BY DR. GEORGE T. BEATSON.

CASE I.—Case of primary carcinoma of the breast treated by x-rays and thyroid extract.

Mrs. M'E., æt. 60, admitted to the Cancer Hospital on 11th June, 1902. Patient has been married for thirty-two years,

and has had six children, the youngest 20 years old. She nursed her children, and the right breast suppurated on two occasions. Menopause at 40. For two years she has noticed a lump in the right breast. Nothing was done for it, and in January, 1902, the skin gave way. She has occasionally pain in the breast.

Condition on admission.—The right breast is represented by a hard, fungating mass, fairly well bound down to the chest wall. The nipple has disappeared; the axillary glands are enlarged; there is some numbness in the right hand. The supra-clavicular glands could not be felt. Weight on admission, 10 st. 2 lb. Weight in December, 1902, 10 st. 3 lb.

Treatment.—Thyroid extract, 1½ grs. twice daily, and application of x-rays every alternate day for ten minutes; commenced on 17th July.

CASE II.—Case of recurrent carcinoma of the breast under treatment by x-rays and thyroid extract.

Miss F., æt. 60, admitted to the Cancer Hospital, 25th April, 1901. Eight years ago, a "lump" was noticed in the left breast; excision of the breast was performed four years later. In January, 1901, she noticed some "lumps" in the vicinity of the scar. For fifteen months she has had epileptic seizures.

Condition on admission.—There was a hard lump, the size of a marble, about the middle of the cicatrix, and some shotty nodules in the neighbourhood. There was no ulceration. The supra-clavicular hollow was filled up, and there was some pain radiating up towards the head. There was apparent thickening of the tissues over the true ribs beneath the scar, but no nodules were felt in this situation. Ulceration of the large nodule occurred in January, 1902. In March, x-ray treatment was commenced, and photograph was taken. In May, 1902, the edge of the ulcer was noted to be flatter, and to exhibit appearances of healing. Weight on admission, 11 st. 6 lb. Weight in December, 1902, 11 st. 5 lb. The other breast was discovered to be involved at this date.

Treatment.—Thyroid extract until May, but none since then.

X-ray treatment was commenced on 15th March, and continued till 19th August, 1902. Walsham light was commenced on 23rd August, and stopped on 13th September.

CASE III.—Case of inoperable carcinoma of both breasts treated by oöphorectomy and thyroid extract.

Mrs. C., æt. 39, admitted to Western Infirmary on 9th

April, 1902, complaining of swelling in the left breast of twelve months', and in the right breast of four months', duration.

Condition on admission.—The whole of the left breast is occupied by a hard swelling, which extends into the axilla. It is very hard, and has ill-defined margins. The axillary glands are enlarged, and the nipple is retracted. The right breast shows a swelling in the upper part. Both breasts are movable over the chest wall.

Treatment.—Thyroid (2 grs.) thrice daily, commenced on 1st May, was increased on 5th May to 5 grs. thrice daily.

23rd May.—Dismissed to Lanark Home.

16th June.—Double oöphorectomy.

30th June.—Diminution in both growths noted.

18th July.—Dismissed.

Professor Muir stated, with reference to Case III, that examination was made of tissues removed from the breast on 16th June, and also in November. Examination of the former showed a typical scirrhus cancer with diffuse infiltration of the lymphatics. In the pieces removed in November, the following condition was shown on the left side. The cancer cells appeared to be in larger masses than before, and considerably more uniform in size, with less diffuse infiltration. There was, however, no increase of the stroma. In the dense fibrous tissue removed from the right breast, no distinct cancerous change could be seen, there being only adipose and fibrous tissue. In the latter, there were some small collections of cells—possibly cancer cells in process of atrophy—but this could not be definitely determined. The ovaries showed nothing of note beyond some general fibrotic change.

Dr. Beatson, in reply to a question, stated that he considered that treatment by double oöphorectomy should be restricted to inoperable cases.

II.—CASES DEMONSTRATED BY DR. T. K. DALZIEL.

CASES I and II.—Two patients, mother and daughter, the former of whom has been operated upon nine times, and the latter twice, for removal of sarcomatous tumours of the face. The cases were reported three years ago (*Glasgow Medical Journal*, March, 1900, p. 188). Both patients are now in good health, and there is no sign of recurrence of the growth in either.

CASE III.—J. G. R., æt. 5 weeks, was admitted to the Children's Hospital on 24th September, 1901, with double meningocele in the occipital region, and a large fluctuant mass in the right parietal region, apparently connected with the subdural space. The skin over the occipital tumours is thin and atrophic, that over the parietal swelling is quite good. There was no paralysis or ocular phenomenon.

On 3rd October Dr. Dalziel removed the occipital tumours, one of which contained some cerebellar tissue, while the other contained very dark fluid only. Both communicated with the subdural space.



FIG. 1—J. G. R.

Before operation—back view.

A year later patient was readmitted, when it was found that the parietal tumour had increased considerably in size. There was marked internal squint in the right eye, but no other paralytic phenomena. The sac was quite translucent throughout.

On 1st December, 1902, the tumour was removed, when it was found to communicate with the subdural space by a comparatively small aperture at the upper part of the parieto-

frontal suture, near the position of the anterior fontanelle. The parietal bone on the right side was throughout very considerably depressed.



FIG. 2—J. G. R.
Before operation—front view.



FIG. 3—J. G. R.
After operation.

On 15th December the patient was dismissed with the wound quite healed, and no bulging at the anterior fontanelle.

III.—CASE OF MULTIPLE EXOSTOSES.

By MR. A. E. MAYLARD.

Patient was a labourer, aged 37. He was admitted to the Victoria Infirmary for a suppurating adventitious bursa situated over a large exostosis on the inner side of the lower end of the right femur. On more thorough examination of patient, numerous other exostoses were discovered about the shaft and extremities of the bones of the lower limbs. No others presenting any visible degree of prominence were found; but on a skiagram being taken of the bones of the left fore-arm, several bony projections were brought into view, although none of these could be felt. Though he had those exostoses as long as he could remember, they had not caused him any physical inconvenience. The large one, which had been eroded on the surface by the suppurating bursa, was successfully removed.

IV.—SPECIMENS FROM A CASE OF CARCINOMA OF THE STOMACH,
WITH NUMEROUS SECONDARY TUMOURS AND MULTIPLE
STRICTURES OF THE INTESTINE.

By DR. T. K. MONRO AND DR. HUGH M'LAREN.

Mrs. T., æt. 38, housewife, was admitted to the Royal Infirmary on 2nd September, 1902, on account of swelling of the abdomen, pain in the back, and constipation.

Her previous health had been good, as a rule, but she suffered from an abscess in the groin after a confinement four and a half years ago. The pain in the back had been present for more than six months, but was not constant. Constipation was habitual with her, but for the past two or three months it had been particularly troublesome. She never had diarrhœa. About a week before admission she had experienced a pain in the stomach which had shot through to the back. For many years she had been subject to bilious attacks; but, apart from these, she had never vomited except after medicine. For the greater part of a year she had been losing flesh and strength, and her appetite had recently failed. There was no jaundice.

The lower border of the liver could be felt an inch above the level of the umbilicus in the right nipple line. The organ was hard and nodular.

By means of castor oil and enemata, large accumulations of hard fœcal matter were removed from the intestine.

Distension of the stomach by carbon dioxide seemed to show that the stomach was normal in situation, and not dilated.

On 8th September it was noted that there was great distension of the small intestine, with vermicular contractions. Pelvic examination revealed nothing of importance. On the 17th and 18th some blood was passed by the bowel. Some days previously she had a good deal of abdominal pain.

A month later, on 17th October, it was observed that her condition had become worse. There was great distension of the abdomen, and fluid was present in that cavity. The patient died that day.

Post-mortem examination (by Dr. M'Laren).—The liver is occupied by a large number of secondary growths, varying in size up to a hen's egg. A few of these growths are umbilicated. A thrombus is found in the portal vein, causing complete obstruction, and thus accounting for the ascites.

The stomach is the seat of a malignant growth which extends from the pylorus along the lesser curvature almost to the cardiac orifice, and also extensively involves the body of the organ. Much of the growth is ulcerated. It has penetrated the stomach wall into the tissues below, and is on the point of invading the head of the pancreas. The neighbouring glands are involved.

Growths were also found in the peritoneum.

Both small and large intestine are the seat of numerous growths. In at least six places (*viz.*, in the large bowel two, and in the small bowel four) these growths entirely surround the gut, and several of them cause almost complete obstruction. The bowel is dilated above some of these strictures. Many smaller growths project into the lumen without causing obstruction. The wall of the vermiform appendix is almost entirely transformed into tumour.

Microscopic examination shows the mucous membrane to be entirely replaced by epithelial cells, which are large and have large nuclei. Many of these cells show vacuoles, as if from degenerative change.

V.—A SMALL TUMOUR OF THE HARD PALATE, OF EPITHELIAL NATURE (REMOVED BY DR. R. FULLERTON), WITH MICROSCOPIC DEMONSTRATION.

BY DR. CHARLES WORKMAN.

The patient, M. M'G., *æt.* 26, mantlemaker, called at the Royal Infirmary Dispensary in the beginning of summer, complaining of a fulness in the roof of her mouth. She had been conscious of its presence for a long time, but it gave rise to no pain and little discomfort.

A rounded swelling was found in the hard palate, close to the alveolar process, on the right side, and somewhat anterior. The mucous membrane covering it only differed from the normal in having a somewhat distended appearance, and in presenting two small openings over the most prominent part of the swelling. These openings were about the size of a large pin head; they seemed to be due to distension rather than to ulceration. A firm, fibrous-looking substance could be seen through them, and probed without bleeding.

The growth felt firm and tense, was but slightly movable, and not at all tender to touch or pressure.

The patient was next seen in the end of October, when the growth was observed to have noticeably increased in

size, but appeared to have remained in other respects unaltered.

The patient consented to its removal, which was easily effected. The growth—firm, rounded, and about the size of a marble—was situated between the mucous membrane and the periosteum. It was quite circumscribed, non-adherent, and shelled out with little or no bleeding.

Microscopically examined, the tumour consists of large masses of epithelial cells, frequently arranged in nest-like masses, and assuming in places a gland-like arrangement. The "cell-nests" are very numerous, and the cells composing them are greatly compressed. The tumour throughout is not very vascular.

VI.—SPECIMENS.

1. By DR. BEATSON.—*Casts from a case of dislocation of the radial epiphysis, simulating Colles' fracture*: J. C., æt. 15, admitted to Ward XI of the Western Infirmary, on 1st May, 1902, suffering from the effects of an accident.

History of the accident.—Five days before admission patient fell a height of 20 feet, landing on his outstretched palms, on to some mud. He consulted a doctor, who told him there was no fracture. Five days after the accident he was admitted to the infirmary with deformity in both wrists resembling Colles' fracture.

A skiagram taken after admission showed separation of the radial epiphysis on both sides. The arms were put up in Carr's splints. On 7th May the fracture was set under chloroform, and again put up in Carr's splint. Patient was found to be suffering from scabies.

24th May.—Dismissed.

2. By DR. DUNCAN MACARTNEY.—*Photograph of bones from chicken's feet which were the cause of acute intestinal obstruction*: The bones were impacted in the small intestine, a few inches above the ileo-cæcal valve, one overlying and crossing the other like sticks in a crow's nest. On the top of them was lying a firm plug of raisin-skins about 2 inches long. One of the bones had perforated the bowel. The bones were gently "humoured" down the few inches of ileum into the colon; the injured bowel was sutured (Lembert). Patient recovered.

3. By DR. JOHN ANDERSON.—*Extra-uterine pregnancy (intra-ligamentous)*: Removed by Dr. Parry from a woman

aged 40. Patient had one child ten years ago. Menstruation was regular until ten months before admission to hospital; the cessation was attributed by her to pregnancy, which was considered to be progressing normally. A fortnight before her admission she had to consult her doctor on account of the weak state of her health, and of bloody discharge from the vagina. The foetal limbs were made out on abdominal examination, and the uterus was found empty. The gestation sac is roofed above and anteriorly by the placenta, with tube and uterus seen in front.

Tubercular disease of the cæcum: Removed from a girl, aged 12, by Dr. Parry. Admitted with fæcal fistula, tenderness over cæcum, and, previous to operation, repeated attacks of severe abdominal pain, accompanied with vomiting. Operation for appendicitis two years ago.

Sarcoma of uterus, affecting surface directed towards the left broad ligament, in which hæmorrhage and altered blood-clot was found. The cavity and inner aspect of uterus was healthy. Patient, aged 54, married; under Dr. Parry. Fluctuant tumour in broad ligament made out. Immediate operation necessitated on account of symptoms of hæmorrhage. Patient died two hours afterwards. There was no definite tumour, but ulcerated condition of uterine wall; hæmorrhage, blood-clot, and necrotic tissue were found between the layers of the broad ligament, and free in abdominal cavity.

Gumma of the spinal cord (lumbar region): The gumma occupied an area, from above downwards, of the size of a green pea. The lesion involved the dorsal columns and posterior cornua on both sides. Patient, man, aged 38; under Dr. Duncan. Had syphilis many years ago while in India. Illness of eight weeks' duration; onset five weeks before admission, with feeling of numbness in right leg, followed by loss of power. Left leg affected a few days later, followed by bladder and bowel paralysis.

Alveolar carcinoma of ascending colon: Man, aged 38; under the care of Dr. Parry. He enjoyed fairly good health until six months before admission to hospital. For two months, symptoms of dyspepsia, followed by severe diarrhœa for about three months, then constipation. Two months before admission, he noted a small swelling in the right iliac region, which has gradually increased in size, and pain developed. The tumour was of large size, extending almost from the cæcum to the hepatic flexure; the entire lumen of the bowel was affected, and there was advanced ulceration.

4. By DR. ARCHIBALD YOUNG.—Water-colour drawings from cases of gumma and tubercular ulcer of the tongue.

5. By DR. FRANK CHARTERIS.—Sphygmographic tracings taken during periods of Cheyne-Stokes' respiration.

6. By DR. CHARLES WORKMAN.—Microscopic preparations of cancerous atrophy of the pancreas, with secondary nodules in the liver.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING VI.—17TH DECEMBER, 1902.

The President, DR. R. M'C. SERVICE, in the Chair.

DR. JOHN M'C. JOHNSTON demonstrated to the members in the Town's Hospital a series of cardiac cases illustrating the various valvular lesions and degenerative changes in the heart which are found so abundantly among the inmates of a parochial hospital.

Sphygmographic tracings from each case were shown. Dr. Johnston found that variation of pressure used had no effect whatever in altering the essential character of the pulse tracing. He mentioned that, as a rule, he obtained high tension in females and low in males. In experimenting with the hands in hot water there was no difference, but immersion in cold water for five minutes caused a difference. Marked examples of arterial degeneration in old men were also shown, and among the other cases exhibited were:—Chronic rheumatism in a young subject, a case of enormous hypertrophy of the toes (congenital), and a large series of hernias of huge size.

Some interesting specimens were shown, including a splendid example of hydrencephalocoele, and a unique case of cancer of the bladder and prostate.

After the demonstration, the members, under the guidance of Dr. Alex. Robertson, inspected the centre buildings (the old Glasgow Royal Asylum), which, it is expected, will be demolished in the course of another year or so.

DR. ROBERTSON gave a short account of the building, which began to be built in the year 1810, and was opened for the

reception of insane patients in 1814; and which, as the Glasgow Royal Asylum for Lunatics, 'was used for insane patients until the removal of the asylum in 1843 to Gartnavel, when the buildings were acquired by the City Parochial Board.

The members were shown some of the rooms or cells in which the patients were confined. The iron staples in the walls, to which chains were attached, to restrain the movements of restless lunatics by fixing a chain round each leg, were pointed out by Dr. Robertson. The building, when erected, was regarded as one of the best in its day, and the treatment then adopted was considered as the most enlightened, though the methods seem barbarous when compared with those now used in restraining violent cases.

At the close of the meeting Drs. Johnston and Robertson were accorded votes of thanks for their demonstrations.

MEETING VII.—21ST JANUARY, 1903.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

THE NEURASTHENIC ELEMENT IN SOME ORGANIC DISEASES.

BY DR. JAMES CRAIG.

Dr. Craig discussed the connection between mind and matter in relation to diseased conditions, and expressed regret that no student of lunacy seeks for a physical basis of mental disturbances. Dr. Craig then read notes of cases that had come under his observation, and which had led him to believe that the cause of neurasthenia in the patients was the underlying organic disease.

CASE I.—Female suffering from hysteria—globus hystericus, semicoma, pallor, but no hæmic murmur, urine albuminous, with casts pointing to undoubted kidney disease. Patient was under observation for three years, and eventually died of cerebral hæmorrhage.

CASE II.—A lady whose husband stated that she was only suffering from hysterical attacks. When seen by Dr. Craig, she was ghastly, looked ill, and appeared as if going to choke; pulse, 94; history of palpitation. Auscultation revealed a presystolic murmur. There had been one attack of angina pectoris. The urine contained albumen. Patient, after two years, died of dropsy.

Four cases in males.

CASE I.—Young man, æt. 18, nervous, pale, pasty looking; protuberant abdomen, measuring 45 inches on inspiration; urine and fæces normal; signs of *tabes mesenterica*. Patient died at 21, of acute peritonitis.

CASE II.—Man, æt. 52, suffering from malignant tumour. In youth he had been fond of athletics. He suffered from insomnia, was very restless, could not sit still even when in tram cars, and was always anxious to tell of his sorrows: urine normal. Operation was performed, but tumour could not be removed; death seven months later.

CASE III.—Man, æt. 52. In early life, he had been addicted to alcohol; suffered from constipation; urine normal. Examination revealed thickening in the pyloric region. *Diagnosis*—cancer. *No post-mortem*.

CASE IV.—Man, æt. 58. He walked the floor for nights on account of insomnia; urine normal; looked anæmic; hæmic murmurs; blood was found not to be that of pernicious anæmia, yet neurasthenia still advanced. Eventually, however, under treatment he recovered from the anæmia.

From a study of these cases, which he fully described, Dr. Craig was of opinion that it was important that physicians should consider the case from points of view remote from the disease complained of. He held that valvular disease in neurasthenia was common, and that emotional conditions were often the result of disease. The mind exercises influence on the progress of disease, and the treatment must be based on broad lines.

Dr. Wm. Findlay congratulated Dr. Craig upon his personal observations in the cases reported, but thought his generalisations not so satisfactory. Regarding the question of mind and matter, there was still mystery about the physical lesions. Dr. Craig's teaching was that, in the case of neurasthenia, there was some lesion, even if you could not find it, and you should seek to remove it.

Dr. Rowan thought the lecturer had gone upon the right lines, and mentioned a case to illustrate how influenza with its prostration effects may be due to the poison depressing the nervous centres.

Dr. Burras was of opinion that what Dr. Craig had been discussing had been cases of hysteria, and should be so named. He had a patient who had been under his care for thirteen years for this condition.

Dr. John W. Findlay questioned whether insanity was due

to a lesion. Mott says general paralysis is due to syphilis, and this has never been refuted, although it is true it may arise from auto-infection in some cases. There was a difference between hysteria and neurasthenia.

Dr. John Patrick referred to the weakness produced by influenza; yet this condition would certainly be inaccurately described as neurasthenia. All organic diseases occurring in patients are sure to affect the mind sooner or later.

Dr. Service was of opinion that the type of disease had not changed.

Dr. Craig replied, and said the term neurasthenia employed by him was intended to include hysteria as well. As to the lesions in cases of insanity, these had been fully demonstrated to him in several *post-mortems* at which he was present in Edinburgh. The type of disease had, in his opinion, changed considerably; the old virulent cases of scarlet fever and typhus were not met with now.

MEETING VIII.—5TH FEBRUARY, 1903.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

I.—CASE OF CHOLELITHIASIS IN WHICH A LARGE QUANTITY OF BILIARY GRAVEL WAS FOUND IN THE STOOLS.

BY DR. WILLIAM FINDLAY.

The patient was a mason, *æt.* 63, who had suffered from pain in the right hypochondrium, and who gave a history of constipation for years. The treatment consisted in the administration of large doses of castor oil; while for the pain, which was diagnosed as due to obstruction of the common bile duct, salicylate of soda (15 grs., three times a day) was given, with the object of reducing the thickness of the bile. Instructions were given for the stools to be carefully watched, and on one occasion, after a very copious loose motion, it was found that a large number of biliary stones had been passed. These were small, and faceted. Fifty-eight stones were counted, but these were not more than a fourth of the number passed. Cholesterin crystals were obtained from them. In the course of five weeks, the patient was well in every way.

Dr. Jas. Dunlop spoke of the great difficulty in finding gall-stones in stools from patients who had all the symptoms of biliary colic. *Dr. Findlay* was to be congratulated on being successful. The smallness of the stones, no doubt, enabled them to be easily passed, and to float in the loose motion.

Dr. Christie referred to a case in his practice where there were paroxysmal attacks of pain in the right hypochondrium. A consultant, being called in, diagnosed gall-stones, and remarked that there was no other thing that could account for this condition of the patient. *Dr. Christie*, however, held to his opinion that it was a case of duodenal catarrh. The urine showed bile. The motions were carefully searched, and some sandy material passed was examined by *Dr. R. S. Thomson*, who found that the ingredients were devoid of cholesterin, but contained calcium, magnesium, &c. The case was therefore to be regarded as one of intestinal sand.

Dr. John Anderson—In attacks of biliary colic, the stone sometimes lodges in the diverticulum of the duodenum. Occasionally, the stone ulcerates through into the duodenum, and the free purgation in *Dr. Findlay's* patient may have dislodged a larger stone. This might cause pain, but it would allow the smaller stones to migrate.

Dr. Service—Many persons suffering from gall-stones never pass stones, yet the *post-mortem* reveals them *in situ*.

II.—CASE OF DIABETES MELLITUS OF SHORT DURATION.

BY DR. J. WILSON MATHIE.

Mrs. M'D., æt. 39, had a family of three.

History.—When she called on *Dr. Mathie*, patient was very weak, pinched, and emaciated; eyes sunken; slight cough. While visiting some friends in the country, she got a severe wetting, but previous to this she was in the enjoyment of good health. Her relatives state that she was then quite well. There was no polyuria, no thirst, no head injury.

Examination.—Lungs normal; urine, specific gravity, 1036, slight albumen, sugar present. Patient rapidly became worse, delirious and comatose, death closing the scene exactly nineteen days from the wetting referred to. *Dr. Mathie* referred to reported cases of diabetes in which the onset had been very rapid, and adverted to a case under the care of *Dr. M'Vail*, where a man sitting at his desk had been seized with intolerable thirst, and forthwith became diabetic.

Dr. John W. Findlay spoke of a case where a man sitting

on the top of a tram car felt great thirst, and developed diabetes straightway.

Dr. John Patrick had a patient who was apparently well previously, but who died in a comatose condition from diabetes. The total duration of illness was four days. There was no history of having been specially thirsty, and her husband was not aware of her passing water at night.

Dr. Couper said there must be some latent signs of diabetes in these cases of short duration, as in incipient phthisis, which shows itself suddenly.

Dr. Mathie also read notes of a case of parenchymatous nephritis.

III.—SPECIMENS.

By *DR. THOMAS RUSSELL.*

Dr Russell showed—

1. Specimen of bone which he had removed from the lower jaw of a patient who had had a tooth extracted some eighteen months previously. There was the history of periostitis having set in within a day from the pulling of the tooth. The portion of bone came easily away, but it had been well wedged in.

2. A glass body with cut edges, which had been swallowed by a child, and passed with impunity ten days later.

GLASGOW NORTHERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING VI.—3RD MARCH, 1903.

The President, DR. J. STEEL MUIR, in the Chair.

DISCUSSION OF THE QUESTION—CAN ANYTHING SPECIAL BE DONE BY THE MEDICAL PRACTITIONER TO DIMINISH THE FREQUENCY AND LESSEN THE MORTALITY OF CANCER OF THE UTERUS?

Dr. J. K. Kelly introduced the discussion. *Dr. Kelly's* paper appears as an original article at p. 241.

Dr. John Ritchie asked if the cervix should really be examined in every case in the same way as the perineum in all labours as a matter of routine. He believed that most books teach us not to do such a thing. Still, personally, in many cases he had regretted that he had not examined the cervix after labour.

Dr. C. F. Spinks wished to know in what way the restoration of the cervix was to be done—by ourselves, or should we get a gynæcologist. It was appalling to him to hear that an accident so common should be such a cause of malignant disease.

Dr. P. McBryde said that one of the chief troubles was to overcome the modesty of females as to an examination. Even when the doctor suggests an examination they often refuse. An examination should be mentioned in every case of doubt, and if refused, the patient should be frightened into consent by having the consequences put clearly before her. Speaking about the age at which cancer appears in women, he said that many thought it was only after the menopause that the disease occurred. Five cases had occurred in his own experience under the age of 32. *Dr. Kelly* had not mentioned anything about cancer of the body of the uterus. Sometimes there were no external signs at the cervix and the uterus shows enlargement, and we have irregular hæmorrhages. In all these cases we should curette and have the curetted matter examined by the microscope. In cancer of the body of the uterus, the disease is much slower than at the cervix.

Dr. Spinks asked if it was always possible to examine the cervix with a speculum without a special light.

Dr. James Todd expressed the great interest he had had in the paper, especially the latter half. The first part, however, had filled him with dismay. He joined with *Dr. Ritchie* in some of his remarks with regard to the examination of the cervix, and thought it quite impossible to suture every case, especially among the working classes. Indeed, the doctor who sutured these cases would likely not have the opportunity of attending them again. What was said in the first part of the paper would have very little practical application. The patients were not yet educated to it.

The *President* thought that *Dr. Kelly* had done full justice to the general practitioner as regards the difficulty of early diagnosis, but was afraid that it was too often assumed by specialists that the general practitioner was to blame for not recognising cases of cancer in the early stages. If so, it

was not because they failed to see the importance of early diagnosis, as they were fully alive to it. The general practitioner is not wholly responsible for the failure. Many signs or symptoms are not pathognomonic of cancer, but are also common to those benign conditions of catarrh and erosions which the lecturer had been dealing with. In other cases where the pathognomonic symptoms of pain, hæmorrhage, and cachexia are present, it is recognised that the disease is then in the inoperable stage. It is often very difficult to come to a decision because the patient sometimes does not mention the conditions at all, and also will not allow an examination when it does appear necessary. In this connection he instanced the case of a lady in good position who had recurring hæmorrhages from the vagina for a long time, and on making an examination, a tumour was found and was afterwards removed by Professor Simpson of Edinburgh. On hearing from the lady's own doctor later on, he was informed that consent to an examination had all along been withheld by the patient, but whenever a stranger had come forward it was allowed. In another case he had called in a specialist in suspected cancer of the cervix. There were all the usual symptoms present, and the specialist had no difficulty in arriving at a diagnosis, and therefore pronounced it cancer of the cervix. The patient refused to allow an operation, became quite well, and remains so. Another patient, a comparatively young woman, had consulted him, and on examination the condition showed that she was "minus her uterus." As the woman was quite unconscious of the fact, he deprecated specialists not informing the patient, at least after the operation was past, what had been done. In closing his remarks, the President said that he would take advantage of all the information advised, but would emphasise the fact that cases were often very difficult to diagnose, even when an examination was allowed, and that the practitioner is often harassed with doubt when symptoms compatible with the benign disease are present, thus being constrained at times to advise his patient rather to bear the ills she has, than fly to others that she knows not of.

Dr. J. Rutherford wished to know if douching might not do instead of suturing, and still prevent lacerations going on to erosions. He mentioned another cause of cancer which was apparent to his mind—want of cleanliness. In this age of asepsis we must face the question of the introduction of dirty matter during coition. The subject had been shirked

formerly by medical men. There is often no bath used in the houses, and much filth is introduced to the parts, and may have something to do with the cause of cancer. We are all familiar with chimney-sweeper's cancer, and why may there not be injurious effects from coition, in a similar way.

Dr. Kelly, after giving thanks to the meeting for attention to his paper, proceeded to take up the various criticisms *seriatim*. The fear that the practitioner had of examining the cervix was the fear that some septic material might be introduced. In many cases there was nothing which suggested a laceration of the cervix. There would then be no call for an examination to be made; but when we had much hæmorrhage or a severe labour, we ought to examine the cervix. He explained that it was quite easy to do this. The cervix could be pulled down to the vulva after labour without trouble with volsellum forceps and pressure externally, and can then be examined by the eye. If any laceration is seen, it will be even more easily stitched than the perineum. Speaking about the light employed, he thought that the examination would often be unsatisfactory in workingmen's houses. With a candle and speculum, however, we might see fairly well. It was to be remembered that we should rely more upon touch than sight in diagnosis of disease of the cervix. He explained that laceration of the cervix had been suggested as a *probable* cause of cancer. The resulting ectropium exposes the lining membrane of the cervix to bacteria and acid secretion, the vagina being the receptacle of bacteria of all sorts. There were many cases of cancer under 30 years of age, but it was commonest after 40. Cancer of the body of the uterus is mostly a disease of old age. Any hæmorrhage from the interior of the uterus in an old person we should at once consider to be cancer. There is no other disease which could cause the hæmorrhage. Curettage would not then be necessary. The whole body must be removed at once. Dr. Kelly did not want it to be thought that specialists were blaming the practitioner for not diagnosing the cases early enough. The stitching of the laceration, too, was by no means a difficult matter. Regarding the relationship of the specialist and the practitioner, specialists often do make mistakes in diagnosis, and should own to it. He could never understand men who have made a mistake not recognising their error. If they act in this way they can never improve. Douching of the vagina was often quite sufficient to allow the laceration to heal without septic mischief, but the effect of the cicatrix was left. Filth

in the vagina has very likely a great deal to do with the cause of cancer in the cervix. It should be insisted on that the vaginal douche should be in more common use. Women should lie on the back with a bed-pan below; not, as is usually done, when the woman sits over a pan. This latter mode would fail to flush the rugose folds of the vagina.

REVIEWS.

Diseases of the Pancreas and their Surgical Treatment. By A. W. MAYO ROBSON and B. G. A. MOYNIHAN. London: W. B. Saunders & Co. 1902.

THE subject treated of in this book is one which has of late been exciting increasing interest in the minds of surgeons, and the present publication comes at a very opportune moment, and will receive a correspondingly warm welcome from surgeons and pathologists alike.

Two chapters at the beginning are allotted to the anatomy and experimental physiology of the pancreas. Then follow a series of chapters dealing with various affections of the organ and the treatment appropriate to each. As might have been expected, pancreatitis claims the lion's share of attention; the other conditions treated of are injuries, calculus, cysts (very fully), and new growths. To each subject an historical introduction is provided, and this is succeeded by pathology, symptoms, and treatment, the whole being illustrated by numerous records of cases.

We would like to be able to outline the more important facts brought forward, but the limitations of space forbid us doing more than mentioning one or two of the conclusions arrived at by the authors. For example, the essential cause of pancreatitis is bacterial infection, while among the determining causes are gastro-duodenal catarrh, biliary lithiasis, zymotic diseases, &c. The most usual channel of infection is through the duct. The "abundance of undigested muscle-fibre in the motions of a patient, not suffering from diarrhoea, after a meat diet," and the absence of carbolic acid and salicin in the urine, after exhibition of salol, are considered "the most satisfactory evidence, at present, of deficient pancreatic juice in the bowel." Again, in the chapter on cysts, we are

presented with a systematic classification, and on p. 210 we are warned that many cases of cyst, so-called, are really peri-pancreatic. We would, also, mention the prominence given to Opie's work on the relationship of the "islands of Langerhans" to diabetes.

There is frequent repetition, but this tends to draw attention to points of importance. In one instance confusion is likely to arise in the reader's mind, viz., as to the part played by pain in the symptomatology of cancer of the pancreas (see pp. 160, 265, and 270).

While confessedly largely a review of the work of others, the book contains a remarkable record of the labours of the authors. Its only fault is diffuseness; but this could be remedied by a summary, at the end of each chapter, of the authors' views. As we have already said, this book is one which is very welcome, and we have to congratulate heartily the authors on the successful carrying out of the intentions expressed in the preface.

Abdominal Examination and Manipulation in Pregnancy.

By ALEXANDER MACLENNAN, M.B., C.M., L.M. London: Rebman, Limited. 1902.

THIS is an excellent little work on a subject which has as yet received too scant attention in this country. Most of the English text-books on midwifery give either no description at all of the various methods of conducting an abdominal examination in pregnancy or labour, or too meagre a description of them to be of any practical value. The result is that few medical men are aware of the great importance of the subject. Though abdominal examination cannot be justly claimed to altogether supplant the ordinary vaginal examination, it is certainly safer, and it gives, in addition, so much valuable information which cannot be obtained otherwise, that we have no hesitation in agreeing with the author that it should be adopted as a routine practice by every one engaged in obstetric work.

Dr. MacLennan's book is the most thorough on the subject which we have seen, and we can, accordingly, strongly recommend it to the general practitioner. Perhaps the only fault that can be found with it is that there are rather many references to the work of others. However valuable these may be from many points of view, they make the reading of the book somewhat more tedious, and they are apt to confuse in some measure those who are not well acquainted with the subject.

The illustrations and the charts will be found distinctly helpful, and the nineteen pages of bibliography at the end of the book should prove useful to those who desire to consult the originals of the works quoted.

Diagnosis by Means of the Blood. By ROBERT LINCOLN WATKINS, M.D. London: Sampson Low, Marston & Co., Limited. 1902.

WE are somewhat at a loss how to take this book, whether seriously or otherwise; in either case we can give it but little commendation. At times, too, we have a difficulty in knowing precisely what the author's views really are, but as we understand them they may be briefly stated as follows:— In the examination of the blood lies the best means of diagnosis and prognosis, no matter what the ailment may be; or, to quote the author's own words, "Those who peruse these pages will perceive . . . that in the blood lies more disease, as well as more premonitory symptoms of disease, than can be found in any other part of the body." And, again, "I wish to say that when patients are sent to me by physicians, I seldom make a physical examination of the chest unless requested. My chief interest is in the appearance of the blood and not in general physical examination. The blood showed at once that the case (the one under discussion) was one of tuberculosis of the lungs." It is the fresh blood that is to be examined, for "the microscopists who examine the fresh blood specimens are those who make the fewest mistakes in diagnosis." "Fibrin is one of the invariable constituents of normal blood. It is a fine, invisible network, which circulates in the blood continually wherever it goes. On exposing the blood to the air, the fibrin oxidises and contracts, which makes it visible under the microscope."

In cases of tuberculosis, the blood is found to contain a considerable amount of granular matter (plates of Bizzozero). These granules, Dr. Watkins maintains, are the essential factor in tuberculosis. It is on these granules that the tubercle bacillus feeds, and without their presence the tubercle bacillus cannot exist. These granules, Dr. Watkins says, disappear from the blood when it is exposed to the air; and in this way he explains why abdominal section, in cases of tubercular peritonitis, is so often beneficial, because the air destroys the granules in the tubercles, and so deprives the bacilli of the food on which they grow.

We have not space to give the author's views in regard to the condition of the blood in rheumatism and other diseases, nor yet his observations as to the origin of the white corpuscles in the blood; but they are much on the same level as those already quoted. We shall content ourselves by stating that in our opinion many of Dr. Watkins' observations are quite inaccurate, and that the most of the conclusions he draws from them are totally unwarranted. The book, indeed, cannot be taken seriously, and we regret that it bears the name of such well known publishers as Sampson, Low, Marston & Co.

Report of the Yellow Fever Expedition to Parà of the Liverpool School of Tropical Medicine. By H. E. DURHAM. With Illustrations and Plate. London: Published for the University Press of Liverpool by Longmans, Green & Co. 1902.

APART from the melancholy disaster sustained by the expedition in the death from yellow fever of Walter Myers, accidents of a minor kind constitute quite a feature in this report. The enterprise was, of course, materially interfered with by the illness of the survivor, and it is perhaps not to be wondered at that a certain amount of fragmentariness and inconclusiveness can be recognised in the report. Nevertheless, there is evidence of painstaking work done. The description of the bacillus constantly found in the organs of fatal cases of yellow fever, and the conclusion that the disease is not due to parasites of the nature of protozoa are noteworthy. Among the other contents are the preliminary report which appeared in the *British Medical Journal*; considerations on Sanarelli's bacillus and mosquito transference; the writer's observations on the etiology of yellow fever; notes on "typical bites," on the lymphatic glands, kidneys, spleen, and urine; on yellow fever on board ship; on ague at Parà; on the general health at Parà; and on prickly heat and sundry other matters of interest or importance.

Medical Ethics: A Guide to Professional Conduct. By R. SAUNDBY, M.D. Edin., Hon. LL.D. M'Gill, Hon. M.Sc. Birm., F.R.C.P. Bristol: John Wright & Co. 1902.

THIS code of ethics will doubtless meet with a ready and cordial acceptance at the hands of the profession. There was certainly room for a more or less authoritative manual of the

kind, which should give the practitioner, and especially the young practitioner, the most recent views of the medical profession as a whole, not only on the ordinary courtesies due by medical men to their brethren, but also on their conduct in relation to the burning questions which have recently been forcing themselves on their attention. Dr. Saundby's connection with the British Medical Association, his professional standing, his experience in matters of the kind, and the number and standing of those gentlemen to whom he submitted this work before publication, invest the book with a high degree of authority, which will, no doubt, be duly recognised.

The various sections are arranged in the alphabetical order of their headings, and there is, in addition, a copious index, so that reference to any subject in the book is simple and speedy. The work is admirable in tone and well written, and the text furnishes good reading for a leisure hour. Various regulations of the General Medical Council and the medical corporations are given in an appendix.

The Practitioner's Handbook of Diseases of the Ear and Naso-Pharynx. By H. MACNAUGHTON-JONES, M.D. London: Baillière, Tindall & Cox. 1902.

THIS is the sixth edition of a book which first appeared in 1878. As the study of otology has advanced and the field of practice in this department broadened enormously during the intervening years, so the handbook has gone on increasing in size and in importance. It remains, however, *par excellence*, a practitioners' handbook.

In the preparation of the issue Dr. Macnaughton-Jones has had the co-operation of quite a bevy of specialists. Dr. Birmingham and Dr. Joyce have together contributed an interesting chapter on the applied anatomy of the ear. Dr. W. R. H. Stewart is responsible for the chapter dealing with the middle ear, and Dr. Milligan for a very excellent essay on the complications of chronic suppurative middle ear diseases, including mastoid and intracranial complications. Dr. Herbert Tilley, in like manner, is responsible for the chapter on diseases of the nose and naso-pharynx in their relation to affections of the ear. And, lastly, there is a short chapter dealing with anæsthetics in operations on the nose and ear.

Dr. Dudley Buxton, who contributes this chapter, says: "Chloroform should not be given when the operation requires

the patient to be in a sitting posture." As the rhinologist is in the habit of examining the interior of the nose while the patient is seated, so lately some London specialists have recommended that intranasal operations, whether under chloroform or not, should be performed with the patient in the upright position. The risks attendant on the administration of chloroform are, we think, greatly increased by that position, and thus the recommendation above quoted is very necessary, and particularly in a book intended as a guide for students and practitioners.

Municipal Housing: Its Economic Basis. By OWEN FLEMING.
London: P. S. King & Son.

THIS small pamphlet of twenty-eight pages, reprinted from the *Builder*, discusses the question of municipal housing entirely from the financial standpoint, and from this aspect has a certain amount of interest; but of necessity the treatment is very superficial, and it is doubtful if any good can be served by its publication in the present form.

Atlas and Epitome of Otology. By GUSTAV BRUHL, M.D.,
Berlin. Edited by S. M. SMITH, M.D., Philadelphia. London:
W. B. Saunders & Co. 1902.

THIS forms one of the series known as "Saunders' Medical Hand Atlases," and deals with otology. In the atlas portion of the book there are close on 250 coloured figures, which are partly from the author's collection and polyclinic practice, and partly from that of Professor Politzer, who acted in collaboration with the author in the production of the atlas.

The anatomy of the middle and internal ear, and the relations between those parts and the surrounding structures, are very fully illustrated. There is also a fairly wide range of pathological changes depicted, both by macroscopic and by microscopic preparations. The various stages of the mastoid operation are illustrated, but while Körner's, Stache's, and Panse's flaps are figured, there is no description of the more recent method of grafting the mastoid cavity.

The drawing and the colouring of the many illustrations have been very carefully executed, and it would be difficult to improve upon this part of the work.

The second half of the book consists of an epitome of otology, and while it gives a very fair *résumé* of the subject, and is made more valuable by reason of its association with the atlas, to which frequent reference is made in the text, it is simply an epitome, and calls for no special notice.

A Text-book of Physics, with Sections on the Applications of Physics to Physiology and Medicine. By R. A. LEHFELDT, D.Sc. London: Edward Arnold.

To write a good text-book on physics suitable for medical students is an extremely difficult task. The knowledge of mathematics required even in the most difficult preliminary medical examination is ridiculously inadequate, and the best teacher of physics cannot make the subject profitable to students who have not had a good mathematical training. Bearing this in mind, we may safely say that Dr. Lehfeldt has performed the task as well as it is possible to do so. The examples of the application of physical principles to physiological conditions are very apt. Thus the flow of fluids through tubes is considered with special reference to the circulation of the blood, and the diffusion of gases is considered with special reference to respiration.

The subject of osmosis is coming to be recognised by physiologists as of supreme importance, and it is gratifying to note that the author makes full reference to this subject.

The least satisfactory portion is that upon sound, since it is a subject of first importance to the physiologist and physician. For example, reference should have been made to the fluid vein, as illustrated by the various murmurs heard by the stethoscope, and some observations might have been made upon the conduction of sound by solid bodies.

The photographs representing the reflection and refraction of sound waves are very interesting. The book is a very good one.

The Force of Mind, or the Mental Factor in Medicine. By ALFRED T. SCHOFIELD, M.D., M.R.C.S. London: J. & A. Churchill. 1902.

THIS book is the result of an editorial note in the *British Medical Journal* on an address of the author's, entitled "The Scope of Mind," in which a request was made to have one or two diseases named "in which the unconscious mind plays the part of causation or cure, and how the knowledge of the

causation of disease was to be used in respect to cure." The terms used by the author are very confusing. This increases the difficulty of the reviewer, especially as the work is of a kind that can be reviewed only in a general manner. The term "unconscious mind" is on the one hand applied to purposeful but unconscious mental action; on the other, it is used to denote the state of mind of Sir James Paget, as expressed in a letter to Sir Henry Ackland, when he wrote, "What unsatisfactory cases these are; this clever, charming, and widely known lady will some day disgrace us all by being juggled out of her maladies by some bold quack, who, by mere force of assertion, will give her the will power to forget or suppress all the turbulences of her nervous system." It requires a good effort of the imagination to believe that any part of a letter written by one distinguished man to another would be written unconsciously. The use of the term "unconscious mind" is further extended, and the author makes it synonymous with the old "*vis medicatrix naturæ*." On a perusal of the book, it seems as if the author had postulated that the unconscious mind was the mental factor in medicine and then elaborated his thesis. Methods such as these are contrary to those of the so-called materialistic school that the author is constantly calling to account. It is surely better, however, to arrive at conclusions on a basis of fact than to bring facts to support a premiss. The mental attitude in medicine should be free of bias.

The book is divided into two parts. In the first part, which treats of "The Action of Mind in Causing Disease," the author approaches his subject from two aspects, psychophysiological and psycho-pathological. Numerous examples are quoted and brought forward to show the power of mind (conscious or unconscious) over the various systems of the body. It is asserted that the mental factors play some part in the causation of all diseases, functional and organic. In dealing with hysteria, the author shows that the chief factor is the unconscious mind which becomes perverted. In this connection, he attempts what has been unsuccessfully attempted for many generations—a definition of insanity. This definition is found in the beginning of one of the chapters of the book in these words—"The man whose conscious mind is diseased is called insane, but one whose unconscious mind is affected is not regarded as insane, but as hysterical." The second part of the book treats of "The Action of Mind in Curing Disease." A chapter is devoted to show that the "force of mind in therapeutics, so largely ignored by the

profession, is generally exploited by quacks for their own ends." The author's argument is that if quackery does some good, why does the medical profession not imitate its methods in so far as they are good? This may be all very well, but does not answer the question that the author set about to answer, viz., how the knowledge of the causation of the unconscious mind in disease was to be used in respect to cure. The opinion is expressed that the force of mind is efficacious in the therapeutics of every disease, and the influence of suggestion in the cure of functional disease receives a good deal of attention. The author regards psychical treatment as important as physical in dealing with neurasthenia, and expresses the belief that, as far as the treatment of hysteria is concerned, the cure lies in the restoration of the unconscious mind to healthy action. The subject brought forward by Dr. Schofield is an important one, and his book is written in an earnest and conscientious manner. It would have been better of a full and accurate description of his own personal evidence of the influence of mind in causing or curing disease, and fewer quotations. There are a number of minor errors; for instance, "casual" (p. 10) for "causal," and "Babrinski" (p. 131) for "Babinski." The style of the book is popular, but the line of argument, while lucidly and simply expressed, is at times spoiled by *mal à propos* simile and matter foreign to the subject in hand. The book cannot be considered a serious contribution to medical literature.

Small-pox, 1900-1902. Report by A. K. CHALMERS, M.D.,
Medical Officer of Health for Glasgow. Glasgow: Robert
Anderson. 1902.

THIS is an account of the several epidemics of small-pox with which Glasgow was visited during the years indicated, and from the statistical point of view is of considerable interest, the excellent "spot" maps at the end showing the various points in a much more satisfactory manner than the usual graphic methods. Beyond the report, however, there is nothing to indicate any further information derived from the epidemics; while even in the tables there are many items which the ardent anti-vaccinator might utilise to strengthen his case. Perhaps Dr. Chalmers will see his way to supplement his report by a contribution to the lessons to be drawn from the epidemics, and suggest improved methods for "stamping out" the disease when it appears.

Thirty-second Annual Report of the Operations of the Sanitary Department of the City of Glasgow, for the year ending 31st December, 1901. By PETER FYFE, Chief Sanitary Inspector. Glasgow: Robert Anderson. 1902.

MR. FYFE'S report contains much interesting reading to all citizens of Glasgow, particularly the sections dealing with smoke prevention and the closure of uninhabitable houses. It is somewhat disquieting to find, too, that of the total number of samples of milk which were submitted to analysis under the Sale of Food and Drugs Acts, over 40 per cent were found to be adulterated. The appendices are copious and complete. A description of the drainage system of the Central Station Hotel is interesting, in connection with the history of the plague in Glasgow a year or two ago.

County Council of Lanark: Eleventh Annual Report of the County and District Medical Hospital, 1901. Glasgow: Robert Anderson. 1902.

THIS report embodies the work done under the Public Health Acts in the county and wards of Lanarkshire under the jurisdiction of the County Council. The report deals in an exhaustive manner with the various points, and will be of special value to medical officers of health in other parts of the country. There is an interesting legal case recorded where damages were claimed from the District Committee of the Middle Ward in connection with the death of a child in Motherwell County Hospital.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Leucocytosis in Pneumonia.—At the nineteenth annual meeting of the New York State Medical Association, held in the city of New York from 20th to 23rd October, 1902, Dr. Alexander Lambert read a paper on the above subject, in which he said that the intensity of the leucocytosis was not always

in proportion to the symptoms or to the amount of the exudate; that the maximum leucocytosis was reached when there was intense infection along with good resistance. Mild cases would show 6,000 to 12,000 to the cubic millimeter; severe cases, 30,000 to 50,000. A study of 87 cases of acute lobar pneumonia showed that a persistently subnormal leucocytosis, i.e., with a count under 7,000, pointed almost invariably to a fatal termination. An extension of the pneumonic process was marked by increased leucocytosis, and when empyema occurred as a complication the leucocytosis increased twofold.—(*The Boston Medical and Surgical Journal*, 4th December, 1902.)

K. J. FIGENSCHAU, in the *Norsk. Mag. for Lægevidensk.*, May 1902, supplies the following particulars regarding cases of croupous pneumonia examined with reference to leucocytosis. Of 50 such cases, upwards of 10,000 leucocytes in 1 c.c. blood were found in 42; the number of leucocytes fell below 10,000 in the remaining 8.

Of these 8, 5 ended fatally; in those which had a fatal termination no eosinophile cells were recognised. The other 3 progressed favourably, and in 2 of them eosinophile cells were present.

Of the 42 cases with leucocytosis, a fatal termination occurred in 6. Complications involving vital organs, such as endocarditis, pericarditis, &c., set in, or the vitality of the individual had been lowered by the excessive use of alcohol, and the heart thereby rendered incapable of bearing the strain which it was subjected to.

In the author's opinion, leucocytosis—apart from its importance from a diagnostic point of view—may play an important part as regards the prognosis, in so far as it furnishes us with a means of estimating the strength of the reaction of the organism against the disease. The presence of eosinophile cells is a favourable prognostic sign; it indicates a mild course, or that the crisis is at hand.—(Salomon, *Deutsche Medizinische Zeitung*, 24th November, 1902.)

Case of Adams' or Stokes' Disease.—Dr. Lewy, of Berlin, describes a case in the *Zeitschrift f. klin. Medizin*, Bd. 47, which presents the various features which characterise this disease. A short summary may be given.

He refers at the outset to the typical picture of this affection as presented first by Adams and afterwards by Stokes, and to the description of cases by, amongst others, His, junior, and A. Hoffmann.

The author's patient is a man, 73 years of age. His pulse-rate from being 72 to 80 would suddenly fall to 24 beats, and at times the interval between the pulsations would be as much as twenty seconds. The patient would break out into a profuse perspiration, and the various signs characteristic of the disease would make their appearance, such as coldness of the skin, loss of consciousness, mydriasis, eye movements, tonic and clonic contractions of the voluntary muscles of the extremities, grinding of the teeth, Cheyne-Stokes' respiration, and screaming. The author directs attention to the fact that, with the exception of the profuse sweating, which has not hitherto been described in connection with this affection, the first six signs are always present, and the last four only in severe cases.

As to the cause of the slowing of the pulse, the author goes on to say that, while Hoffmann in his case heard murmurs over the heart during the pause, the author, even with the aid of the phonendoscope, was unable to discover any. From this he concludes that a true suspension of the cardiac contractions takes place owing to nervous influences. He cites, in this connection, the works of Hering in *Pflüger's Archiv*, Wenckelbach (I-III) in *Zeit.-chr. f. klin. Med.*, and by Engelmann in *Pflüger's Archiv*.

Since the signs of myocarditis are absent, and since the coldness of the skin and dilatation of the pupils point to paralysis of the sympathetic, the author is inclined to regard irritation of the vagus as the cause of the disease. The sweating and coldness of the skin, with, at the same time, the eking out of

the strength, support this view. But it is difficult to say what constitutes the source of the irritation of the vagus. Although the case terminated fatally, no *post-mortem* report was obtained.

The author remarks further that there was never any increase in the area of cardiac dulness, accordingly the increased volume of the pulse with each contraction of the ventricle was of no special significance; that, while the blood-stream was greatly reduced in rate, it was still capable of sustaining life so long as absolute rest in the recumbent posture was maintained; movement of the body, however, rendered an increase in the rate of the blood current necessary, and being unable to cope with this the heart stopped.—(Keckzeh, *Deutsche Medizinische Zeitung*, 29th January, 1903.)

A Study of the Myospasms, Myokymia, Myoclonus Multiplex, Myotonia Acquisita, and Intention Spasm.—At the twenty-eighth meeting of the American Neurological Association held in the New York Academy of Medicine, from 5th to 7th June, 1902, Dr. George L. Walton read a paper with the above title introducing a discussion. Some of the salient points may be given, together with a summary of four cases of paramyoclonus multiplex described in the course of the discussion.

The author is of opinion that the present classification of the spasmodic affections is wanting in uniformity. Myoclonia is used both as a collective term and as a synonym for myoclonus multiplex. This latter term should not be applied to persistent muscular quivering. Myoclonus multiplex is symmetrical; it involves large muscles, and is an affection of the central nervous system. General muscular quivering, on the other hand, represents a purely muscular disorder—perhaps a faulty connection between the terminals of the nerve and the muscular fibres, and is best named myokymia.

Two cases were presented showing general muscular quivering without atrophy, persisting three and five years respectively, and two typical cases of myoclonus multiplex were reported; also a case of "intention spasm." Neither the myotonic reaction nor the myotonic muscular disorder was present. The following were the conclusions drawn:—

1. "The term myoclonia, as a collective designation for unrelated disorders, should be discontinued."

2. "The term myokymia should be limited to cases showing, without hereditary or congenital history, widespread muscular quivering, without atrophy or other indication of progressive degeneration of the nervous system, without constitutional symptoms, and without signs of present infectious or other acute disease. Cases should not be excluded, however, on account of preceding or introductory symptoms pointing to disease of the lower neurons, if such disease has either disappeared or come to a standstill."

3. "The term 'myoclonus fibrillaris multiplex' should not be applied to such cases, since it suggests a relationship between myokymia and the paramyoclonus multiplex of Friedreich, with which it has nothing in common."

4. "Paramyoclonus multiplex should be used to designate bilateral clonic spasms involving whole muscles or groups of muscles, generally those attached partly or entirely to the trunk."

5. "The term 'myotonia acquisita' should be limited to non-hereditary and non-congenital cases, in which otherwise healthy individuals present the typical motor disorder or the typical reactions of Thomsen's disease. This term should not include the rigidity accompanying marked intestinal disorder or pronounced psychopathic states, even though the rigidity in the latter conditions may be increased by voluntary movement."

6. "The tendency to spasm or attempted voluntary movement, unless accompanied by the typical motor disorder, or the typical reactions of Thomsen's disease, should be classed as intention spasm."

Cases of paramyoclonus multiplex:—

CASE I.—Reported by Dr. F. W. Langdon. A girl of 13 had violent shock-like contractions of the muscles of the trunk and of those connecting the limbs

with the trunk. They rarely extended beyond the knees or elbows. They numbered 30 to 80 per minute. The face, hands, and feet were unaffected. The wrists, ankles, and toes were flaccid, even during the muscular contraction of other parts. The spasms were symmetrical, but with a tendency to be more pronounced on the left side. They ceased during sleep; during waking hours they have not intermitted for half an hour at a time for six weeks. The mother attributes the onset of the attacks to a fright. Anti-spasmodics merely modify the contractions.

CASE II.—Dr. N. E. Brill showed a patient, a girl of 16, who was first seized with clonic spasms, involving all the muscles of the upper and lower extremities, a year ago after a severe fright. No movements occurred below the knees. Both sternomastoids and the abdominal muscles were involved. The muscles concerned in speech became affected, and her articulation was described as “snappy and explosive” in character. There were at no time fibrillary twitchings in any of the muscles. She never had rheumatism or chorea. The distribution of the muscular spasm was more extensive and involved more muscle groups than any case he had known of. Drugs had no influence, but improvement followed suggestion, and in this respect it resembled hysteria; there were, however, none of the sensory stigmata peculiar to that affection. He referred to the difficulty of distinguishing this class of cases from *tic convulsif* of the French writers.

CASE III.—Dr. M. Allen Starr made reference to the case of a young man, 31 years of age, who had suffered from this affection for about eight months. It began during an attack of influenza, and was ascribed to mental shock resulting from a fright. The spasms were limited to the muscles of the trunk. Speech was affected in much the same way as in Dr. Brill's case; patient uttered peculiar involuntary sounds. During four months in hospital patient improved under rest in bed, baths, and massage; other treatment proved of no value. He has now one spasm, lasting a few minutes, in two or three days.

CASE IV.—Dr. Morton Prince mentioned a case in which spasms of the muscles of the lower limbs set in after an accident. On the same evening marked spasmodic contractions, confined almost entirely to the quadratus femoris on each side, appeared. They extended to the posterior group of muscles on an attempt being made to move them. The spasms persisted for many years. Stretching of the nerves was performed. Immediately afterwards the character of the spasms changed; they occurred during the night, but next morning they disappeared, and have never recurred. It is worthy of note that they began as a traumatic neurosis, and ceased abruptly, although it is doubtful whether the nerves themselves suffered any actual damage.—(*The Boston Medical and Surgical Journal*, 25th September, 1902.)

SURGERY.

By JOHN PATRICK, M.A., M.B.

Subcutaneous Injections of Hard and Soft Paraffins.—Gersuny (*Centralblatt für Chirurgie*, 3rd January, 1903), the inventor of the method, says that his expectations of the varied usefulness of paraffin injections have proved well founded. In one respect, however, his wishes have been fruitless—in the employment, namely, of paraffin of higher melting point and of specially constructed syringes. The ultimate result of the injection appears to be identical whether one uses vaseline (ungt. paraffini of melting point between 35° and 40° C.) or a harder paraffin—a swelling as hard as cartilage of the form and size determined by means of the injection.

Vaseline has this advantage, that it can be injected in the non-fluid state with an ordinary Pravaz or serum syringe. The advantage of hard paraffin is its immediate setting after injection. Its greater safety as regards the occurrence of emboli is scarcely certain, as it must enter the tissues from the needle in a fluid state.

Gersuny allows that in some cases hard paraffin might be useful, as, for example, in hernias, which for some reason or other may not be operated on, where an injection of hard paraffin in the region of the orifice of the sac directly under the peritoneum would form a kind of plug covering the orifice, and leaving the neck of the sac a narrow non-elastic opening, so that the bowel or omentum might with tolerable security be prevented finding its way into the sac again. He has had, however, no occasion to use paraffin of higher melting point than vaseline. The contention that vaseline so injected might become fluid in highly febrile conditions rests on a misapprehension; for the injected vaseline does not form one single homogeneous mass with a simple connective-tissue capsule, but is rather broken up into numberless little clumps, each with its own connective-tissue capsule, so that the hardness and durability of the injected area does not depend on the hardness of the paraffin, but on the tightness of this new-formed tissue.

As a precaution against embolism, it is worth while, after injecting a few drops of cocaine solution or Schleich's solution, to remove the syringe from the needle which remains in the skin, and observe if blood appears; if so, the probability is that the point of the needle lies in the lumen of a vein. Should it be so, no paraffin is to be injected in that spot.

If it is desired to inject paraffin into a highly vascular tissue, such as the parametrium, or into loose connective tissue, such as the tissue between the posterior wall of the pharynx and the vertebral column, it is advisable to insert a small "paraffin-dépôt" of about 1 c.cm., and, a week later, into the middle of this infiltrated area to inject a greater quantity.

Gersuny considers that any paraffin injections are hard if the melting point is above 35° C. For certain purposes, for injection into very delicate tissues, he has employed a mixture of one part vaseline with four parts olive oil, freshly prepared and sterilised by boiling. He supposes that the olive oil will be absorbed, and leave behind the minute paraffin-dépôts situated at some distance from one another in the tissue, and becoming there encapsuled. The first experiments in the use of this mixture were to elevate depressed scars in the neck to the level of the surrounding skin. Here the results were good, as the oil-vaseline mixture gave the proper consistence aimed at—namely, that of the subcutaneous fat. In a case of facial hemiatrophy, the mode of treatment was no less successful: the canine fossa and the hollows above and below the zygomatic arch were filled up with hard paraffin; there remained the buccal region, which was very much sunken, with the zygomatic muscles standing out like a ridge. The thinned cheek was injected with the soft vaseline and oil mixture; its consistence corresponded with the other side, and the facial expression became normal.

To illustrate other uses to which the soft paraffin mixture may be put, the author narrates a case in which there was on the forehead an extensive dark grey discolouration of unknown origin. The injection was tried, with the result that the colour was greatly improved, although there was some swelling of the skin. He thinks this swelling must have effected a separation of the pigment granules, and so given rise to clearer colour of the skin.

The Prevention of Ventral Hernia after Laparotomy.—Oscar Wolff (Essen), in the *Centralblatt für Chirurgie*, 13th December, 1902, writes that he has tried all manner of sutures of the abdominal wall, and the application of various binders and supports after the operation, and found that, in spite of his precautions, ventral hernias did take place sooner or later. He made strict investigations, however, in all cases which returned with ventral hernia, and invariably discovered that in the first few days after the

operation there had been a greater or less amount of meteorism. He argues, therefore, that the mechanical pressure of the distended bowel causes the stitches, especially those in the fascia, to yield, either by the knot giving way or by the thread cutting through the tissue; the skin suture heals by first intention, and remains intact.

The question comes to be, then, how to prevent meteorism, since meteorism and ventral hernia stand in the relationship of cause and effect.

From this point of view, for two years Wolff has stitched completely only those laparotomy wounds in which an absolutely certain reactionless result was expected; in all other cases in which there might be a greater or less amount of secretion, in which the serous surface was wounded or abraded, or in which there were appearances of recent inflammatory action, the abdominal cavity was not completely closed, but drained with a small piece of iodoform gauze placed between the sutures already in position ready to be tied. He has the impression that the sutures hold more firmly after such drainage, and that ventral hernia is much rarer.

Johannes Hahn (Mainz) in the *Centralblatt für Chirurgie*, 24th January, 1903, replies, and gives a record of 88 laparotomies since 1896 with suture in three layers without a single ventral hernia, whether meteorism occurred or not. His method is—

1. Isolated—i.e., interrupted—suture of (a) peritoneum (plus transversalis fascia); (b) aponeurosis of abdominal wall to the exclusion of muscle; (c) skin with possibly buried sutures of a well developed panniculus.

2. The sutures should all be of absolutely sterile silk.

3. Complete healing-in of the threads. This means strictest asepsis.

The skin stitches are removed in about eight days; the patient, as a rule, is up in two weeks, and wears no binder or belt.

Max Schede.—Tillmans, in the *Centralblatt für Chirurgie*, 24th January, 1903, has a very sympathetic note on the loss sustained by German surgery in the death of Schede. His life of not quite 59 years was one full of work. He is specially mourned by his friends and colleagues on the editorial staff of the *Centralblatt für Chirurgie*, of which, in 1874, he was one of the founders. For sixteen years he was joint-editor. He did important work in the Austrian War of 1866, and later in the Franco-German War. He was Director of the Surgical Hospital at Friedrichshain, then was transferred to Hamburg, and latterly, since 1895, he was Ordinary Professor of Surgery and Director of the Surgical Klinik in Bonn. He made very numerous contributions to surgical literature. "For all that Max Schede did in his science and in his art, for all that he was to his patients, to his pupils, and to us his friends and colleagues, let us, sorrow-stricken yet thankful, lay on his too early grave the imperishable laurel, and into eternity send after him with heartfelt sincerity the cry—'Thou hast thy reward.'"

NERVOUS DISEASES AND INSANITY.

By DR. R. S. STEWART.

Diplococcus Aureus of Meningitis. By Balthazard (*Le Progrès Médical*, 24th January, 1903).—A microbe hitherto undescribed has been found in a case of acute meningitis, which is defined as the *diplococcus aureus meningitidis*. It grows on serum, giving yellow, rounded viscous colonies; on potato, bouillon, and on gelatine, which it liquefies at 18° C., and coagulates milk in three days. It is an encapsuled diplococcus, and in the serum of young hares takes the form of short chains or small masses. In the cerebro-spinal fluid it is found included in polynuclear leucocytes. It kills mice

in twelve hours, but is not pathogenic in rabbits or guinea-pigs, which distinguishes it from pneumococcus, the meningococcus, and the streptococcus of Bonome.

Diplococcus of Meningitis. Claude and Bloch (*Le Progrès Médical*, 24th January, 1903).—The fluid drawn by lumbar puncture from a case of acute and fatal meningitis was found to contain intra-leucocytal diplococci analogous to that of Weichselbaum, but different from the meningococcus. It grew in bouillon, but could not be cultivated on gelatine, did not coagulate milk, and developed well in the serum of rabbits. It killed mice in forty-eight hours, but had no effect on rabbits. In this case there co-existed a vegetative endocarditis, the centre of which penetrated into the musculo-cellular tissue at the base of the ventricle, and contained diplococci similar to those described.

Clinical Peculiarities of Diphtheritic Paralysis. Aubertin (*Le Progrès Médical*, 24th January, 1903).—In sixty-five cases it was noted that the paralysis presented very little motor trouble, and almost no sensory trouble. The flaccid pendant palate was never seen, and, at the most, only a paresis of the muscle, and the pharyngeal reflex was always preserved. In the paralysis of accommodation the ciliary muscle alone was implicated, the iris being respected. Paraplegia was always slight, but atrophy was often considerable. In short, the condition was one of flaccid paresis with abolition of the tendinous reflexes, without sphincter troubles, and with no sensory complications.

Pathogenesis of Tabes. Marie and Guillain (*Le Progrès Médical*, 24th January, 1903).—These observers contend that tabes is not merely a radicular neuritis, and not a mere extension to the cord across the meninges, but is a lesion of the whole posterior lymphatic system of the cord.

The Fundus Oculi in General Paralysis. Keraval and Raviart (*Archives de Neurologie*, January, 1903).—The following conclusions are drawn from the observation of fifty-one cases of this affection. The majority presented notable lesions, and it was only in those in whom remissions had occurred that these did not exist. In five out of seven advanced cases there was white papillary atrophy, once grey atrophy, and once a posterior bilateral sclerohoroiditis without myopia. A pale, "washed" papilla was found in thirteen cases. Ophthalmoscopic examination was in every case confirmed by microscopic examination, the condition even in slightly marked cases being one of papillitis and neuro-retinitis presenting the same characters as the chronic diffuse meningo-encephalitis, namely, infiltration of the higher elements of the papilla and optic nerve by connective tissue cells, thickening of the connective framework, and alterations of the ganglion cells and of the nerve fibres of the retina.

Intimate Structure of the Human Cerebral Cortex. Turner (*Journal of Mental Science*, January, 1903).—This writer is convinced that there is a distinct system of cortical cells which, by means of the ultimate branching of their dendrites, are in organic continuity with each other through the medium of a peri-cellular network enveloping the pyramidal cells, and, further, that collaterals also blend with the network, so that if these collaterals arise from the axis cylinders of pyramidal cells, which in all probability they do, and this union is not an exceptional occurrence, this implies that in a roundabout fashion the whole pyramidal system of cells is also joined together, and that therefore practically all the cortical cells are in continuity with one another.

The Alkalinity of the Blood in Mental Diseases. Pugh (*Journal of Mental Science*, January, 1903).—The alkalinity of the blood is physiological in chronic mania, melancholia, and dementia, is lowered in cases of mania

during the period of excitement, and undergoes a constant and well marked diminution in paralytic dementia. In epilepsy it undergoes marked variations. It is below normal during the inter-paroxysmal period, and undergoes a sudden and prolonged fall immediately prior to the onset of the fit. A further fall takes place after the fit is over, followed by a gradual return to the normal. The higher the alkalinity, the less liable is the patient to have a fit, and it is impossible to elevate and maintain the alkalinity within physiological limits for any appreciable length of time by the administration of drugs.

Review of Neurology and Psychiatry.—The first number of this monthly review, edited by Alexander Bruce and Edwin Bramwell, contains original articles by Sir William Gowers on "Local Panatrophs," by Sir John Sibbald on "Psychiatry in General Hospitals," and by Byrom Bramwell on "Disseminated Sclerosis." Such a journal as this is to be welcomed as tending to enhance the view of the essential unity of these two subjects, and everyone will heartily wish it success. One of the features of the publication will be the abstracts of important papers which have appeared only a month prior to the making up of the matter of the journal.

Scottish Criminal Statistics.—If a judicious blend of the "kailyaird" literature, *The Unspeakable Scot*, the Lunacy Commissioners' Reports, and the Criminal Statistics Reports were made, one might possibly arrive at a fair average estimate of the Scottish character. Of a truth, it were well that note should be taken of what appears to be a distinctly retrograde tendency of the Scottish race. This is how the report goes that is "presented to both Houses of Parliament by command of His Majesty"—"An examination, however hurried, of the tables which make up the Criminal Statistics for the year 1901 will show that the rapid increase in crime and disorder, which began in 1897, has continued, and has as yet received no check. Never, so far as we know, have so many prosecutions been initiated in Scotland, and never before have there been so many committals to prison." "The causes which have contributed to this rise have probably been drunkenness and juvenile delinquency." "Good trade and high wages amongst the working classes are, no doubt, chiefly responsible for the increase in drunkenness and disorder." There is none of the maudlin, one-sided, and misleading sentimentality of the "kailyaird" about this sort of publication, but bare, sober facts, and they could hardly be blacker.

BACTERIOLOGY.

By A. R. FERGUSON, M.D.

The Occurrence of Tubercle Bacilli in the Milk of Cows Reacting to Tuberculin. Stenström Olof (*Zeitschr. f. Tiermed.*, Bd. vi, 1902, p. 241).—The cows were all in a greater or less degree tuberculous, as demonstrated afterwards by autopsy. None showed, however, a tuberculous of the udder during life or on careful examination after slaughter. The samples of milk were taken at various times—sometimes during the period of lactation, in other cases just before the animal was killed. The result of eighty-three inoculations made with the milk in the usual manner was striking—not a single animal used for inoculation contracted tuberculosis, although the cows in many instances had been, in the highest degree, tuberculous.

The Serum-Diagnosis of Tuberculosis. Ruitinga, P. (*Zeitschr. f. Tuberkulose u. Heilanstaltswesen*, Bd. iii, 1902, p. 448).—The author pursued his research precisely according to the descriptions of methods given by

Arloing and Courmont. Of 20 cases in which tuberculosis could not be demonstrated, 9 gave negative and 10 gave positive results.

Of 13 cases in which the occurrence of tubercle bacilli in the sputum established the diagnosis, 5 gave a negative, and 8 gave a positive reaction. Of 3 cases in which the clinical diagnosis of tubercle appeared practically beyond doubt, but in which tubercle bacilli could not be demonstrated, 2 were negative, 1 positive.

Of 7 cases of lupus, 4 gave a positive reaction; of 14 cases of so-called surgical tuberculosis, 5 gave a positive reaction.

Two cases of tubercular meningitis gave a negative reaction.

Of 3 healthy and 6 tuberculous cattle, the serum gave in all cases a positive reaction, and in a higher degree of dilution (1 in 40) than in the human subject. The serum from two wild rabbits reacted positively. Five cases in which the blood from the placental end of the umbilical cord was investigated gave a negative result.

The author concludes, on the basis of the foregoing observations, that the conclusions of Arloing and Courmont on the subject are not borne out. He holds their method of serum-diagnosis in tuberculosis to be untrustworthy, cases of undoubted tubercle in his hands giving no reaction, whilst others, from which any suspicion of tuberculosis could reasonably be excluded, yielded it in more or less decided fashion.

PUBLIC HEALTH AND INFECTIOUS DISEASE.

By HUGH GALT, M.B., C.M.GLASG., D.P.H.CAMB.,

AND

JOHN BROWNLEE, M.A., M.D.GLASG., D.P.H.CAMB.

THE Nobel Prize, value 200,000 francs, has been awarded to Major Ronald Ross, Harben Lecturer for 1902, in recognition of his investigations into the causes of malarial fever.—H. G.

DR. ALBERTO MICHELAZZI (*Riforma Medica*, October, 1902) states that, as the result of his investigations, he concludes that the *micrococcus tetragenus* offers an obstacle to the development of the bacillus of tubercle, but only in those cases where the infection by the former precedes that by the latter.—H. G.

The Air of Factories and Workshops.—A paper on this subject, by J. S. Haldane, M.D., F.R.S., appears in the *Journal of Hygiene* for October, 1902. Throughout the investigation the author relied on the estimation of the CO₂ present as the measure of impurity of the air; the method employed for this estimation was that described by the author in the *Philosophical Transactions* for 1887. The air was also examined bacteriologically by Frankland's method. The general average of carbon dioxide found in the rooms examined was 10.1 volumes per 10,000 during the day or with the electric light, and 17.6 during gaslight. In one case, during the day, in a spinning-room, 46.2 per 10,000 was present; and in this same case the temperature was 92° F. In the case of gas, the author clearly shows the great advantage of the incandescent system over ordinary gas burners. The incandescence electric light is, of course, perfect from a hygienic point of view. The general absence of anything like systematic arrangements for ventilation in workrooms is somewhat startling, and the use for this purpose of ordinary windows may lead to other evils. With regard to fans as ventilators, extraction fans appear to be

best, especially where there is any considerable quantity of dust in the air of the workroom. The author points out that only in one case—that of cotton cloth factories—has the Secretary of State, under the Factory Act of 1901, laid down a standard for the proportion of carbon dioxide, which is in this case fixed at 9 volumes per 10,000. It is also pointed out that one reason for the often defective ventilation in workrooms is the objection of some of the workers to fresh air. As might have been anticipated, the bacteriological examination of the air did not throw any great light on the problem of ventilation.—H. G.

The Etiology of Dysentery.—This is the subject of a paper by E. T. Hewlett, M.D., in the *Journal of State Medicine* for December, 1902, and the author thinks that there is good reason for dividing what may be termed one and the same disease, clinically speaking, into (1) amoebic, (2) bacillary, and (3) sporadic dysentery. In the last form various organisms seem to act as causal agents, especially the *bacillus pyocyaneus* and *bacillus coli* under certain conditions.—H. G.

Ptomaine Poisoning from Cheese.—In the *Journal of the Sanitary Institute* for July, 1902, there is an extract from the report of the Medical Officer of Health for Finsbury describing a circumscribed epidemic of ptomaine poisoning from cheese. Seventeen cases in all occurred, and the consignment of cheese which was the cause of the outbreak was traced; it was Dutch cheese. The general symptoms were epigastric pain, rigors, vomiting, diarrhoea, prostration, and some fever. There was no death, and the symptoms in most cases passed off in the course of forty-eight hours. *Tyrotrozin* was isolated from some of the samples, and, as the incubation period was a few hours only in all the cases, it was assumed that the tyrotrozin was the poison causing the symptoms.—H. G.

Physiology of Stimulation.—In the treatment of fevers, no subject is of greater importance than a correct understanding of the reasons which underlie the administration of stimulants. Some light is thrown upon the subject by a paper in a recent number of the *Archiv für Protistenkunde* by G. M. Calkins and C. C. Lieb on "Studies on Life History of Protozoa." Taking paramæcium as the form for experiment, they tried on it the effect of beef extract, alcohol, and strychnin.

In a fever a fight is continually progressing between the parasite and its host for mastery, and the victory of the latter depends in general on life being maintained long enough to allow the organism to produce sufficient protective substances to enable it to overcome the parasite. Stimulants are used to enable the organism to exert its fullest powers for the longest time possible.

In the life history of paramæcium a somewhat similar phenomenon appears. It is well known that, when this organism has been grown for a long time in hay infusion without the intervention of the act of conjugation, fission ceases and the race rapidly dies out. Calkins, however, has shown that declining races of paramæcium can apparently be absolutely rejuvenated, apart from conjugation, by being daily stimulated for a certain time on meat extracts, some power not derived from the usual food being communicated by this medium.

The same experiments were repeated with alcohol. It has no effect in very weak solutions, and likewise in very strong ones its influence is useless; but in mean amounts it likewise possesses the power of preventing death during periods of depression, although it does not exert to the same extent the rejuvenating influence which appears to be possessed by meat extracts.

The effect of strychnin is very interesting. The stimulant power is not lasting, there being no renewal of vitality after an initial stimulation with strychnin—as there is, for example, with meat extract. Individuals removed from the strychnin medium to clear hay infusion rapidly decrease in their rate of division, and soon die.

The summing up of the article is to the effect that meat extract appears to act on the organism as a whole; alcohol, apparently, as in man, upon the secreting activities; while strychnin seems to perform a negative rôle by, possibly, preventing oxidative processes and postponing death.

In the light of these experiments, it would seem that stimulants have, in the depression of disease, a higher metabolic use than simply acting mechanically in the maintenance of the circulation.—J. B.

Etiology of Scarlet Fever.—In *Public Health* for January two articles are published regarding the cause of scarlet fever, and their contradiction shows that a great deal has yet to be made certain. One article describes the organism which Dr. Class has advanced as the cause of scarlet fever. The characters of this organism appear to be very unstable, it appearing as a diplococcus, streptococcus, or streptobacillus, the size varying from a point which can just be distinguished with a twelfth-inch oil immersion lens to (in old cultures) a coccus a third the diameter of a red blood corpuscle.

The point of entrance of infection is usually the throat, though the germ may also invade through wounds. From this it reaches the blood-stream, and, if the patient be susceptible, an acute attack of the fever supervenes, the organism remaining in the blood only for a very short time except in severe cases. It is not definitely stated whether the organism has been recovered from the desquamative skin or not, but that is inferred in the statement that when desquamation ensues the scales are filled with the scarlet fever coccus.

In the other article, which is written chiefly from the administrative point of view, Dr. Klein's organism is assumed as the most probable cause of the disease, but it is definitely alleged that the organism is not contained in the desquamating skin.

It would seem from this that these cocci can hardly be identical.—J. B.

DENTAL SCIENCE.

By J. DOUGLAS BROWNLIE, M.B., CH.B., L.D.S.

Oral Sepsis and its Relations to General Disease.—J. F. Colyer (*Journal of the British Dental Association*) refers to the connection between lymphadenitis and diseased teeth. He says that, when arising from diseased conditions of the teeth, the acute form is generally due to acute septic conditions of these organs. Chronic lymphadenitis in connection with carious teeth is more common; but though he admits a close relationship between septic teeth—i.e., teeth whose pulps are dead, and whose periosteum is the seat of septic inflammation—and lymphadenitis, he does not consider that the frequency with which carious teeth are associated with lymphadenitis indicates that the glandular trouble is directly traceable to the teeth.

Cases recorded by Starck seem to prove that the tubercle bacillus may gain entrance by carious teeth. One patient, a previously healthy boy of 18, developed tubercular glands. Carious molars were present on both sides. The teeth were extracted and the glands removed. Examination of the glands showed that they were tuberculous, and cover-slip preparations from the teeth showed tubercle bacilli. Halle, of Berlin, exposed the pulp of the tooth of a dog, covered the surface with Prussian blue, and sealed it in. Some days later the animal was killed, and, on microscopic examination, particles of the Prussian blue were found dispersed through the pulp to the apex, and also in the glands, though in very small quantities. Halle's clinical investigations have also pointed in the direction that the bacillus may gain entrance to the body through a living pulp.

Books, Pamphlets, &c., Received.

- Practical Handbook of the Pathology of the Skin, by J. M. H. Macleod, M.A., M.D., M.R.C.P. With Eight Coloured and Thirty-Two Black and White Plates. London: H. K. Lewis. 1903. (15s. net.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 21st MARCH, 1903.**

	WEEK ENDING			
	Feb. 23.	Mar. 7.	Mar. 14.	Mar. 21.
Mean temperature, . . .	42·5°	39·4°	41·9°	43·6°
Mean range of temperature between day and night, . .	11·6°	11·1°	13·8°	10·7°
Number of days on which rain fell,	7	5	6	7
Amount of rainfall, . . ins.	1·77	0·71	1·23	2·82
Deaths registered,	284	254	289	318
Death-rates,	18·8	16·8	19·1	21·0
Zymotic death-rates, . . .	1·9	2·2	1·9	2·2
Pulmonary death-rates, . .	5·2	4·2	5·7	7·1
DEATHS—				
Under 1 year,	66	54	61	65
60 years and upwards, . .	50	46	71	68
DEATHS FROM—				
Small-pox,	1	...	...	...
Measles, . . . . .	...	3	1	2
Scarlet fever,	1	2	...	...
Diphtheria,	2	...	4	1
Whooping-cough,	16	18	16	19
Fever,	2	1	3	4
Diarrhoea,	6	10	4	7
Croup and laryngitis, . .	...	2	1	...
Bronchitis, pneumonia, and pleurisy,	51	40	64	73
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	10	23	16	14
Erysipelas,	22	19	22	14
Scarlet fever,	34	37	39	25
Typhus fever, . . . . .	...	...	3	...
Enteric fever,	19	13	14	14
Continued fever, . . . .	...	1	1	1
Puerperal fever,	2	...	5	5
Measles,*	41	65	57	49

* Measles not notifiable.

SANITARY CHAMBERS,
GLASGOW, 26th March, 1903.

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ORIGINAL ARTICLES.

THE CONSUMPTIVE POOR—WHAT TO DO WITH
THEM: A PLEA FOR NOTIFICATION.¹

By WILLIAM FINDLAY, M.D.

IN approaching a consideration of the great tuberculosis problem, which has for the past few years been agitating the lay and medical mind, the part of the question chiefly pressing for discussion and solution is that embraced by the title of this paper—"The Consumptive Poor, and How to Deal with Them," the rich, or those who cater for such, having already solved the problem for themselves in the provision of sanatoria all over the country for the efficient care and treatment of their malady on open-air methods.

I will take it for granted that it has been established beyond question that consumption is an infectious disease. I will not stop to discuss here the subtler questions of heredity and predisposition, contenting myself with observing that those who are hereditarily predisposed to the disease, who possess in their constitutions a receptive soil which favours the growth of the infective germ when it finds a lodgement, are the very persons who are likely to receive most benefit from the new doctrines and the precautions arising out of the same, and on

¹ Introduction to a discussion at the Eastern Medical Society on 25th February and 4th March, 1903.

whom it is especially incumbent to lead a physiological life. Neither is it my intention to debate whether or not the open-air sanatorium treatment for phthisis has come to stay; but, accepting the fact that it is at present the sanest treatment that the wit of medical man has devised, and that it is being every day more and more taken advantage of by the most intelligent and wealthy classes, I pass on to the consideration of the question of how the poor may receive a like measure of treatment.

Is there, then, any real or substantial provision for such? At present, so far as I am aware, there is only one place in all broad Scotland where the poor can be treated for consumption free of charge—Mr. Quarrier's sanatorium, Bridge of Weir—and that is exclusively for females, though provision, I understand, will by and by be found for a certain number of males also.

General hospitals, for obvious reasons, refuse consumptive cases, but, even if they did receive them, they have no provision for treating them on open-air methods.

Parish Council hospitals receive, of course, pauper cases, but they are in the same category as general hospitals in having no provision as yet for the new treatment of consumptives, though the Glasgow Parish Council have erected sanatoria for the open-air treatment of consumptive lunatics; and in the new chronic hospital about to be erected at Stobhill there are, I understand on the authority of Mr. Motion, to be wards set aside for consumptives, chiefly, I should say, of the advanced or less curable type.

The only other door of hope for the poor consumptive, in Glasgow at anyrate, is the Lanark sanatorium in contemplation of erection by the Glasgow and District Branch of the National Association for the Prevention of Consumption, &c., but, unfortunately, it is not open yet, nor is it likely to be for a considerable time to come, and even were it open to-morrow it would only admit a fraction of the numerous sufferers.

Now, Mr. Quarrier's sanatorium, great blessing and all as it has been, and, in increased measure, will continue to be when accommodation for males is provided, can only, inasmuch as it is supported by voluntary contributions, overtake a very small portion of this class of suffering poor.

Dr. Alexander Robertson, in a highly thoughtful, moderate, and well-digested article in the *British Medical Journal*, 22nd February, 1902 ("General Hospitals and Pulmonary Consumption"), sketched a plan whereby general hospitals might make provision for a limited number of consumptive

cases, which, he thinks, would have this advantage, that, being within the city boundaries, patients, especially advanced cases, would be easily accessible to their friends if death were near, and, therefore, more content to die there instead of at home where they would be a dangerous source of infection; but Dr. Robertson's plan is, I fear, also open to the objection (though he is inclined to think otherwise) that the relief thus provided would be a comparatively small affair.

Parish Councils might easily do for pauper consumptives what the Glasgow Parish Council has done for lunatic consumptives. We see, indeed, from reports in the lay and medical press that they are already moving in this very direction. Such provision might include isolation hospitals for advanced cases, and other hospitals or sanatoria for the early or more curable cases. The supply of accommodation, moreover, would be commensurate with the demand, as the funds for their upkeep would be met by the public rates. The Local Government Board might object to Parish Councils making such separate provision, but it should not be difficult, in the present temper of the country, to induce the commonsense of Parliament to grant such power, as it would in the end be a saving of public money by saving health and life, and increasing the wage-earning capacity of cases that would otherwise go to the bad and so become a burden upon the rates. Besides, if there was ample and separate accommodation for the treatment of consumptives in a Parish Council hospital and sanatorium it might go a long way in removing the objections so often urged by the more independent and respectable poor against entering a poorhouse hospital. This objection, where it is genuine, and not, as is often the case, a mere excuse for staying out because the objector thinks he is not likely to get such good treatment in a poorhouse hospital as in a general hospital, ought to be treated with respect, and even fostered, though we may acknowledge to ourselves that it is only a sentimental one, and that there is really no very material difference between the reception of public charity and that voluntarily contributed.

In the meantime, however, this Parish Council scheme is only in the air, and we may have a long way to travel, and a good deal may happen in the interval, before it becomes an accomplished fact. But suppose it were in existence to-morrow, it would only be for the accommodation of paupers, and there is a very numerous and most deserving class of respectable working poor—tradesmen, clerks, shop-salesmen, and warehousemen—whose limited means put private sanatoria

completely out of the question, who would be left without any provision whatever. At present, the contemplated Lanark sanatorium, together with Mr. Quarrier's projected addition for males, are the only available provision in the near-hand future for this class of consumptive sufferers; but, after all, both these places combined, when we take into account the lengthened period of residence necessary for the cure or restoration of each patient, will only accommodate a limited number, and these the early or incipient cases, the advanced and comparatively hopeless ones, whom Dr. Allan has taken such a deep interest in and so eloquently pled their claims with his pen, being left to find provision as best they can.

Private enterprise is sure always to be even more than commensurate with the demands of the rich, but public charity must necessarily always fall far short in provision for the exigencies of the poor. It is for these very reasons that I have always advocated a municipalisation scheme, whereby the subjects of consumption would be provided for and treated on the newest up-to-date methods, just as other infectious diseases are provided for and treated, at the public expense.

I am aware that such a scheme would necessarily mean some form of notification, and I am not sure whether or not we are sufficiently enlightened, as a public community, to adopt the same, though I learn from the medical journals that our American cousins, in this as in so many other things, are considerably ahead of us. In New York the Act, in a compulsory form, has been in operation since 1893. It is also in force in Michigan and in several other cities and States of America, and, I believe, in Norway. Experience of its working in the States shows generally that it has not caused any inconvenience to patients, nor, as was anticipated by objectors, has it affected harmfully the wage-earning capacity of those in the early or slight stage of the disease. Its operation in New York has shown that the disease was chiefly confined to certain areas in the city, and that cases cropped up year after year in infected houses; also, that the death-rate had fallen 30 per cent, and was confidently expected to double that in other four years. Throughout this country, too, notification, of a voluntary character, however, has been spreading rapidly, such important cities as Liverpool and Manchester having adopted it. Finsbury adopted the system in 1900. In the following year the Corporation of the City of London adopted a similar system, and voluntary notification is now in operation in Greenwich, Hammersmith, Hampstead, Kensington, Lambeth, Southwark, Stoke Newington, Wandsworth, and

Woolwich. The most recent borough to adopt the system is Wandsworth, where it is to be accompanied by the payment of ordinary notification fees. And, coming nearer home, Glasgow has had in operation for some time a modified voluntary notification system, whereby the medical officer for the city receives notifications of phthisis from our public dispensaries, Parish Council hospitals, and, of course, from the Corporation bacteriologist. A voluntary system, however, though it may furnish the medical officer of health with a certain amount of valuable information which he will be able to turn to account in the health interests of the citizens, can only reveal a part of the truth. As long as the public know that notification is only voluntary, the hands of the medical man will be tied. In a number of cases, particularly amongst his best patients, a notification on his part would simply mean the choice between a half-crown fee and the loss of a patient. It may be replied that such notification would be held as strictly private and confidential, but that would not save the doctor from the shrewdest suspicion, all the same. Besides, unless the doctor's notification is acted upon in an open and straightforward manner, it seems to me that his information would be robbed of the best part of what it is intended to achieve.

I don't know what these various cities, which have adopted the Act, make the grounds of a notification, but, if we were once the length of acknowledging the principle, it occurs to me that there should be no insuperable difficulty in coming to a finding in the matter, without seriously inconveniencing or bearing injuriously on anyone. Bacteriology, indeed, which has been so helpful, even to revolution almost, both to the theory and art of medicine, has already paved the way towards a solution of the difficulty. As in enteric fever and diphtheria, for instance, we are only certain of our diagnosis when Widal's reaction has been got in the one case and the bacillus in the other, so in equivocal cases of phthisis we are only sure of our diagnosis when the sputum has yielded the tubercle bacillus, the discovery of which by our city bacteriologist I would, therefore, suggest as not only a most expedient but reasonable ground for notification. It would not be necessary, of course, that a general dislocation of education and work amongst the members of a household should follow upon notification, as happens in the case of other infectious diseases, unless there is ample accommodation for the infected persons or they are removed to hospital. It might not mean anything more than that infected persons and houses would

be under the surveillance of the sanitary authority, whose duty it would be by instruction and advice to safeguard the healthy from infection, and secure to the diseased sanatorium treatment before their cases reached an advanced stage.

I am not without sympathy for the general prejudice existing against notification, but when we look it straight in the face we shall, I think, find it, like other prejudices, unworthy of our support. We must, first of all, get rid of our shamefacedness about ourselves or those belonging to us being the victims of phthisis; and the knowledge that it is not our fault or that of our ancestors, but of the bacillus getting into our systems and producing the disease, as other bacilli get into our systems and produce other infectious diseases, will help us to do so. We all, doubtless, feel that it is a terrible thing to be branded as a consumptive, but if we saw it in its true light—the non-infected amongst us as well as the infected—we would feel quite differently in the matter. Now, to my mind, this notification question has already pretty well solved itself by the establishment of the various sanatoria throughout the country. Every person who goes into a consumptive sanatorium, whether he realises it or not, publishes to the world that he is a consumptive. He voluntarily brands himself—signs his own notification, so to speak. Nor do we find in our experience that this is a deterrent; on the contrary, we see that those who can afford it are only too glad to take advantage of sanatorium treatment, likewise to remain under it for five or six months in order that a cure, as far as possible, may be effected.

A system of notification would, I feel sure, be for the interest and benefit of the poor in many ways—might, indeed, be a blessing in disguise, since they are not like the rich, with ample means at their command, plenty of home accommodation, doctors to attend and advise in the interest of the healthy as well as the sick, and skilled nurses to wait upon them. Notification would bring to the poor sanitary supervision, with instruction in the laws of health, especially in relation to consumption. It would also secure the disinfection of houses from which a consumptive had been removed by death or to a sanatorium, and so be the means of saving others from becoming victims. It would likewise bring with it some wise form of compulsion, thereby ensuring to the ratepayers that they get a reasonable value for their money, and to the patients that they do not miss their reasonable chance of recovery. It would never do for these poor consumptives to go in and out of sanatoria at their pleasure,

which there would be a strong temptation to do among the reckless and less intelligent, whenever they took a longing for home; and this temptation would be all the greater to those advanced cases, who felt they were incurable and were only putting in their time in sanatoria till death released them from their sufferings. Dr. Rushton Parker, of the Westmoreland Consumptive Sanatorium, which provides for the poorer and most advanced consumptives, and who is the author of an exceedingly interesting article, "Homes for Advanced Consumptives," in the *Tuberculosis Journal* for January, 1903, writes me as follows:—"I am under the impression that a large proportion of poor advanced consumptives will enter homes if they are made attractive and comfortable; and that much good may be done if they will even stay there till some weeks before death; for the longer they stay the less likely are they to spread their infection." Dr. Parker's "impression" may be quite correct as regards his Westmoreland poor advanced consumptives, being, no doubt, formed from experience. It is also true that there will be a certain amount of saving to the spread of infection by removing them from their straitened and crowded homes, and isolating them for a time in an hospital or sanatorium, but does it not look a little like undoing all that had been done—a needless waste of energy and money—to allow them to return to their families some weeks before death, and when the disease, moreover, is at the very worst stage of infection. I am not so sanguine as Dr. Parker. My experience as parish doctor for the last quarter of a century leads me to the conclusion that the numerous and miscellaneous class of poor consumptives (not necessarily pauper poor) in a large city like Glasgow could not be trusted to stay of their own free will for a lengthened period in an hospital or sanatorium, either in their own interest or that of their families. The early or slight cases should, therefore, be compelled to remain in sanatoria for a reasonable time to enable them to be cured or sufficiently restored to allow of their return to their families as bread-winners again. And when they did return they would have been well disciplined in the duties pertaining to the leading of a physiological life, so as to keep well, and avoid infecting others of the household. They would, moreover, have the advantage of being under the supervision of the sanitary authorities, who, if they showed a disposition to lapse, would help to keep them up to the mark. The advanced and, of course, most infectious cases, again, especially those from one-room houses (a very numerous class), where there is

often a wife and several little children, would require to be detained till they died, to prevent them returning and spreading infection amongst their families. This would, no doubt, be felt to be a great hardship, but it is the only logical outcome if we are to keep infection from the healthy and not throw away public money and energy for a comparatively barren result. We don't feel it the same hardship that we are obliged to die in hospital from enteric fever, after lingering, it may be, three or four months; and we would require to school ourselves to view death in sanatoria from phthisis in a similar light. That such a consummation is not beyond our reach is proved by the mental attitude of the public to-day regarding other infectious diseases, whose notification, I am old enough to remember, was regarded with as great dislike and impracticability as the notification of consumption is viewed to-day.

NOTES OF A CASE OF INOPERABLE CARCINOMA OF THE PREGNANT UTERUS IN WHICH THE PORRO-CÆSAREAN OPERATION WAS SUCCESSFULLY PERFORMED.¹

By J. M. MUNRO KERR, M.B.

MRS. O., æt. 36, was admitted to the Maternity Hospital under my care on 16th June, 1902, for advanced carcinoma of cervix uteri and pregnancy.

History.—She was married ten years ago, and has had four previous pregnancies, the last child having been born two and a half years previously. There was no difficulty at birth of any of these children.

Her health has always been excellent until the onset of this illness. In August, 1901, without warning and without any apparent cause, she was seized with a severe "flooding" while walking in the street. The bleeding at that time was so severe that she had to be plugged, and it continued off and on for about three weeks. Since then, every few days she has had bleeding—sometimes slight, but at other times a large quantity of blood being lost.

¹ Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 28th January, 1903.

In January, 1901, she first felt severe pain in the small of the back, although for several years previously she had suffered from a slight aching pain in that region. This pain has been almost continually present since January, and was sometimes so severe as to demand the administration of morphia. In addition to this, she has sometimes had severe pain in either side of the abdomen, just above the groin.

In January, 1901, a foul-smelling whitish discharge appeared for the first time, and has persisted ever since.

For the last month or two she has had difficulty with her bladder, sometimes suffering from retention of urine, and at other times from incontinence.

In the second week of February she first felt foetal movements, and before that she was unaware that she was pregnant.

In the month of February she was seen by me in consultation with Dr. Jones, and later was resident in the Western Infirmary; but it was thought inadvisable to resort to any operative measures until the time of her confinement drew near, as the disease was so far advanced.

Condition on admission to Maternity Hospital.—She has a cachectic appearance, and is extremely anæmic. She used to be a stout woman, but has wasted considerably during this illness. No enlargement of any lymphatic glands can be made out. The heart and lungs are normal. As far as one can judge, pregnancy has almost reached term. The foetal heart can be heard plainly. On vaginal examination, one can feel a large mass involving the entire cervix and upper part of vaginal wall, and extending for a short distance up the right side of the uterus. There is no tenderness on making the vaginal examination. The surface of growth is very ragged, and there have been frequent hæmorrhages since I saw her in March.

Three days after admission I performed Cæsarean section, and extracted a living healthy male child. Fritsch's fundal incision was employed, as I had previously determined to remove as much of the uterus as possible. The extraction of the child was very easy, and the uterus down almost to the cervix was removed. The stump was carefully stitched and covered over with peritoneum in two layers.

The progress of the patient was absolutely satisfactory, and she left the hospital thirty-three days after the operation. She was then wonderfully well. I have been informed that she died six weeks after returning home. The child when last heard of was well.

The case was inoperable when I saw her first at the end of February, for the vagina and lower part of right broad ligament were affected. The mother's disease, therefore, being beyond removal, there was only one treatment possible, and that was to allow the pregnancy to go to as near term as possible, and then to do Cæsarean section.

The treatment of the uterus after removal of the child was, I think, the best in the circumstances. I adopted it because, if I had done the conservative operation and left the body of the uterus, I was afraid there might be septic infection; for, as is known, there is nothing so foul as a malignant ulcerating carcinoma. I was very careful in stitching the stump and covering it with peritoneum.

An alternative treatment which I considered along with my colleagues, Drs. Jardine and Russell, was the scraping away the mass and extracting the child *per vias naturales*. Such a treatment was dismissed, however, for it would have meant almost certainly the loss of a large quantity of blood, and the scraping and tearing, probably, into peritoneal cavity and bladder.

SOME QUESTIONS BEARING ON INFANT-FEEDING DEALT WITH IN THE LIGHT OF RECENT OBSERVATIONS.¹

By CARSTAIRS DOUGLAS, M.D., B.Sc., F.R.S.E.,

Professor of Medical Jurisprudence and Hygiene, Anderson's College Medical School; and Pathologist to the Maternity Hospital, Glasgow.

Two winters ago I submitted to the Society a paper dealing with the sterilisation of milk in infant-feeding—a subject in which I was much interested at the time. As I remarked on that occasion, the subject of infant-feeding falls very naturally within the scope of the work of an obstetrical society, many of the members of which are constantly called upon to advise parents regarding the nourishment best adapted to the infant they have delivered; and my excuse (if any justification be needed) for touching on this subject so soon again, lies in the fact that within the last two years certain new theories and suggestions have come to light which require us once more to consider our position. I shall therefore

¹ Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 28th January, 1903.

crave your indulgence while I touch on some of the more important of recent opinions.

If a mother can nurse, is in good general health, and has a sufficient secretion of milk, we are freed from an immense amount of worry, and lightened of a great load of responsibility. At the same time, it does not always follow that because a mother can nurse and has plenty milk, that a child will thrive, for the milk may be wanting in one or other of its three great solid constituents—proteid, fat, or sugar. Where this occurs, it has been found that great help may be obtained from an analysis of the milk, the mother's diet, exercise, and habits being subsequently altered in order to bring about the requisite modification.

Since my last paper on this subject I have analysed the milk from nursing mothers on several occasions, and have been able to throw some light on the cause of the malnutrition of the infant. In one case, for example, there was a reduction of the fat to 55 per cent of the normal, the milk-sugar also being somewhat reduced, while the proteids remained normal. In another, the fats were again reduced to some extent, while the proteids, on the other hand, were distinctly too high. In general, however, it may be said that when a child is getting its natural food, we shall not have much occasion to be anxious about its nutrition.

In those many instances where an artificial food is required, we naturally turn first to cow's milk. Of quite recent years there has been a tendency to give this undiluted, that is, to give whole milk, even to an infant of a week old, and men will tell you that it does quite well. But I have reason to know that it does not always do well by any means, and I cannot indorse the plan. Cow's and human milk differ in a very distinct way as all of us know. This is apparent at a glance if we look at the accompanying tables of analyses taken from Pearmain and Moore¹:—

	HUMAN.	COW.
Water,	87·3 per cent.	87·6 per cent.
Total solids, . .	12·7 „	12·4 „
Proteids,	1·7 „	3·3 „
Sugar,	6·4 „	4·8 „
Fat,	3·4 „	3·6 „
Ash,	0·2 „	0·7 „

The most striking difference is the proteid percentage.

¹ Pearmain and Moore, *Aids to the Analysis of Food and Drugs*, 1899, p. 8.

Now, it is this which produces the curd, and as it is curd that so often causes intestinal irritation in infants, it seems to me not altogether a matter of indifference to employ undiluted cow's milk. Further, I am convinced, from observations recently made by myself in the Maternity Hospital here on human milk removed by the exhaustor, that the curd is in all instances much softer and more pultaceous in woman's than in cow's milk, and more easily broken down subsequently by peptonising ferments. This is largely due to the larger proportion of albumins not coagulated by rennin in the proteid of human milk as contrasted with bovine.

I am willing, however, to admit that possibly we sometimes dilute cow's milk too much. At the same time, I still think it wise, in the first few weeks of life, to add to one part of milk two parts of some suitable diluent, making up further defects by the addition of cream and sugar, preferably lactose, if the parents can afford it.

While I am still dealing with this matter, let me emphasise another point of importance in connection with the place of fats in the infant-dietary, and this is their action in aiding the absorption from the bowel of the salts of calcium and magnesium.

These salts are not very readily taken up by the intestine, but when a sufficiency of fatty acids is present, they come to exist as soaps of calcium and magnesium, and as such are more readily absorbed. When we remember the importance of these elements to the rapidly growing skeleton of the young child, we can at once understand the importance of fat in its diet, and the loss to the bones which the absence of it might occasion. It is quite possible that this is a cause of rickets (Herter¹). Another advantage of fat is its power of correcting constipation, so often present in hand-fed children.

Leaving now the question of the chemical composition of our diluted cow's milk, let us consider once more the matter of sterilisation.

This subject, as you all are doubtless aware, came recently into great prominence on account of Koch's remarkable statements regarding bovine and human tuberculosis enunciated by him at the International Tuberculosis Congress held in London in July, 1901. A good account of the subject is to be found in a paper on the "Etiology of Tuberculosis," by Dr. Arthur Latham,² recently published, and I have relied on it for a short

¹ Herter, *Lectures on Chemical Pathology*, 1902, p. 55.

² Latham, "Some Points in the Etiology of Tuberculosis," *Edinburgh Medical Journal*, 1902, No. xii, p. 415.

general statement of the argument for and against. Koch subjected healthy cattle to inoculation, inhalation, and feeding with tubercle bacilli from man, and was unable to convey the disease to the animals, although they were very susceptible to infection from tubercle of bovine origin. Further, although pigs fed with the bacilli from tuberculosis in cattle showed marked evidence of infection, pigs fed on human infected sputum showed no sign of tubercular disease, except a few little nodules in the lymphatic glands of the neck, and, in one case, in the lungs. Koch therefore assumed that human and bovine tuberculosis were different, and that if man could not infect cattle, cattle conversely could not infect man. If, he said, milk is a common source of tubercular infection in children, primary tubercular lesions of the bowels should at least be fairly common. But this is not the case, for Biedert, in over 3,000 *post-mortems* of tuberculous children, found primary intestinal tuberculosis in only 16 instances, while Baginsky, in 933 autopsies on tuberculous children, never found the disease in the intestine without also finding it in the lungs and bronchial glands.

The practical outcome of this is that in Koch's opinion infection by the milk, butter, or flesh of tuberculous cattle is of the rarest occurrence, and there is just about the same chance of a child getting tubercular disease in this way as there is of his being infected as the result of hereditary transmission alone. To us the deduction of practical importance is this, that if the foregoing be true, we need no longer trouble about the pasteurisation or sterilisation of milk intended for infant-feeding.

At the International Conference on Tuberculosis held in Berlin in October last year, Koch stated he did not admit that any evidence had been brought in refutation of his position. In no case of alleged infection by cow's milk, where very careful scrutiny was made could it be maintained that it afforded clear evidence of the transmission of bovine tuberculosis to man. Boiling did not sterilise milk, but it rendered it unwholesome, and the obligatory sterilisation of milk as part of the crusade against consumption was, to his mind, a great waste of money.

Now, it is not my intention, in a paper of this scope, to enter into a detailed account of the arguments that have been brought forward against this latest view of Koch, but I should like to state, as briefly as possible, two or three pieces of evidence which are of considerable importance. In the first place, Orth (who has succeeded Virchow at Berlin) has published

in a recent number of the *Berliner klinische Wochenschrift*¹ a full account of some experiments he has carried out with Esser. The inoculating material was from a freshly opened human phthisical cavity, and was first cultivated in the body of a rabbit. The animals selected were three calves, three pigs, and three goats. For details the reader may refer to the original paper, but I may summarise the results for convenience. Of the three calves, one was infected and showed distinct tuberculous peritonitis. Of the three pigs, one was infected and showed tuberculous infiltration of the thymus and right lung. Of the three goats, the first showed typical lesions in the thymus and right lung; the second was infected in the skin, the omentum, and lymphatic glands; and the third showed extensive tuberculous infiltration of the abdominal wall, the omentum, and peritoneum, especially about the intestines. Thus, out of nine animals inoculated with human tubercle, five showed distinct and typical lesions. Orth thus considers it definitely proven that Koch's statement regarding the non-transmissibility of human tubercle bacilli to cattle is disproved, and that as one positive experiment is worth ten negative ones, we have here warrant for not abating in the slightest degree those precautions already in operation against infection from tubercular milk and meat. Ravenal has been able to infect three calves out of four by intra-peritoneal injections of sputum from man, and he finds that human and bovine bacilli are about equally virulent in the case of pigs.

In the second place, von Korosy reported last year that when the histories of 4,000 tuberculous children were investigated, it was found that those who had been nourished with cow's milk were three times greater than those who had been fed at the breast; and, in 1898, Thorne stated that while there had been a reduction of 66 per cent of cases of phthisis at all ages during the past forty-five years, there had been actually an increase of 27 per cent of cases of tabes mesenterica during the first year of life (quoted from Latham²).

If a third argument is needed, it is to be found in those cases which have been reported, and about which there is little room for doubt, in which direct inoculation of bovine tubercular material has taken place into, for example, a scratch on the hand, with subsequent local and eventual general development of tubercular lesions. I think you will, therefore, agree with me that we have as yet no evidence of sufficient weight

¹ Orth, "Was ist Perlsucht?" *Berl. klin. Wochens.*, 1902, No. 34.

² Latham, *op. cit.*, p. 427.

to permit us to be neglectful of precautionary methods against tubercular infection by milk.

I do not propose to enter now into the question of the best method of sterilising milk. I have already done so in my previous communication. As a general rule, exposure of the tubercle bacilli in the moist condition to a temperature of 70° C. (158° F.) for from forty to sixty minutes will kill it. But of late it has been asserted on various sides that this temperature is not high enough. Unfortunately, if much higher temperatures are used the milk suffers, not only as regards its actual nutritive properties, but also in that peculiar quality it possesses—of preventing infantile scurvy. In the meantime, I think it is a good working rule that all milk used for infants under 1 year of age should be pasteurised for fully forty minutes at 70° C. (158° F.), which will not affect the milk in any harmful manner, and which will, it must be remembered, destroy the organisms of typhoid and of diphtheria, apart altogether from the question of tubercular infection.

Turning for a few moments to the question of the purity of milk for infants as regards the presence of preservatives, I would like to say emphatically that no milk containing any preserving agent should be employed for a young child, and if a child suffers from gastric derangement without adequate cause it might be as well to see that these bodies are absent. In this respect the milk of our city is very satisfactory. Of 120 analyses of milk for formalin, boric acid or borax, and salicylic acid performed by me during the last two years or so, in only 4 samples was any preservative found, and that was boric acid (or borax). I think we may, therefore, congratulate ourselves on the purity of Glasgow milk in this respect at least.

When one finds that an infant cannot take cow's milk diluted, or mixed in any way whatever, without pain, flatulence, or the passage of undigested curd, it becomes necessary to find some suitable substitute. But whatever food is chosen, it must be adapted to the physiological capabilities of the infant. Ptyalin is found in the secretion of the parotid gland at birth, and appears in the submaxillary some two months later; the secretion at this time is scanty. Pepsin occurs in the stomach at birth; trypsin is secreted by the pancreas during the last third of foetal life, while amylase does not appear till one month after birth. About steapsin little is known.¹ It is thus clear that the ferments which act on starch are the last to be freely secreted.

¹ Schäfer, *A Text-book of Physiology*, 1898, vol. i, pp. 330 *et seq.*

I have found it useful, when the child vomits early after a feeding, and brings up curds, and suffers pain early after a meal—in short, where the symptoms point to gastric disturbance, as against intestinal—to administer 5 minims of the liquor pepsinæ just before each, or, at anyrate, alternate bottles. It is borne well. Where pain comes on an hour after food, with sharp crying, abdominal distension, and, later on, the passage of undigested curd, indicating intestinal derangement, the use of an anti-fermentative, such as sodium salicylate, in doses of $\frac{1}{2}$ to 1 gr. thrice daily, will sometimes prove very helpful. Calomel is also of use. Mellin's food suits many children, making them fat and big, though perhaps a trifle pale and flabby. It is a farinaceous milk food that has been malted, so that the starch exists in dextrin and maltose. It is cooked with milk; but even it may not agree. Savory & Moore's, Nestlé's, and Allen & Hanbury's infants' food are all on much the same principle. I have a high opinion of Horlick's malted milk, and frequently use it. In severe indigestion it can be used alone, simply dissolved in very hot water; this is seldom vomited, and no curd is passed. Gradually a little milk may be added, then more and more with reduction of the Horlick, until in a month or two the child can take a cream and milk mixture without any malted milk at all. A slight drawback is that it may occasion diarrhœa, but this may be counteracted by the use of lime water. For a temporary food, condensed milk may be utilised, and another newer preparation which I have tried is peptogenic milk powder. Condensed milk is sometimes regarded with suspicion, or dismissed with a contemptuous reference to it as "milk-jam," but I think it has undoubted uses, especially for temporary employment, and if the unsweetened variety be used. It has the merit of cheapness and of being easily prepared. Any want of proteids and of anti-scorbutic properties may be supplied by the simultaneous administration of raw beef juice. Peptogenic milk powder, a preparation of Messrs. Fairchild's, has been used a good deal, for example in the Sick Children's Hospital here, and has given very encouraging results. It is a white powder, alkaline in reaction, faintly sweet to taste, contains sugar, but no proteids, fat, or peptones. From my examination of it, I conclude it must be composed chiefly of lactose, with some pancreatine added, and a little alkali. It can peptonise fibrin, though it does so slowly. In preparing the milk, $\frac{1}{2}$ pint of fresh milk, the same of water, 2 oz. of cream, and a measured quantity of the powder, are mixed in a clean saucepan, brought slowly to the boil with constant stirring, and the thing is completed. I find, on

analysis, that the milk then contains a distinct amount of albumoses. It has a pleasant taste, and should prove of distinct value in dyspepsia with hard curd. The forms of humanised milk prepared by the Aylesbury Company are, doubtless, known to you all, and some reference was made to them on the last occasion on which this subject was under consideration here. Another preparation I have tried lately is Paget's milk food, which is a modified and concentrated form of cows' milk, so prepared that, on dilution with a fixed amount of water, it yields a mixture, the proteids, fats, sugar, and salts of which very closely approximate to those in human milk. It has a pleasant taste, and, according to Hutchison, hardly curds at all with rennet.

The last subject on which I should like to touch is a new suggestion for the treatment of that rare form of wasting in young children called by Parrot "athrepsia." In a recent number of the *Archives de Médecine des Enfants*,¹ I read a full account of the clinical phenomena, and of certain new suggestions for treatment, by Professor Combe, of Lausanne, and Dr. Narbel, his house-physician in the children's clinique. The wasting that may follow on dietetic derangement in very young children may develop into a serious condition which the investigations of Parrot and Baginsky have elevated to the rank of a true morbid entity. It is to this, as I have mentioned, that the name of "athrepsia" is applied.

The chief clinical signs are extreme wasting and debility, vomiting and sickness, intestinal inflammation causing diarrhoea of a dysenteric character, with colic and tenesmus; intense thirst, and inspissation of the blood. The urine contains an increased quantity of indol, skatol, phenol, ammonia, and phosphoric acid, indicating active tissue change and metabolism. In treatment the best results were got from the use of malted preparations of maize, oats, wheat, and rice, prepared with water. Later on, milk was added in small amounts. Calomel proved to be a useful drug.

But the novelty in their line of treatment lay in the substance employed as a tonic for the nervous system. They were anxious to give some form of phosphorus compound, but were dissatisfied with the various preparations of inorganic phosphorus. Phosphates, lactophosphates, and hypophosphites, they concluded, were with difficulty utilised by nerve tissue, if at all. Glycerophosphates, which many of us prescribe, and which were introduced into practice because this is the form in which phosphoric acid can be obtained from brain

¹ Combe and Narbel, "Traitement de l'athrepsie de l'enfant," *Archives de Médecine des Enfants*, 1902, No. 7, p. 285.

tissue, were also used. They conclude, however, that they are only absorbed to a slight extent from the bowel, and they argue that the nerve-cell cannot make use of this acid for purposes of restitution, as it is itself simply a product of cell-metabolism. Whether this view is correct or not, I cannot say. The point of interest, however, lies in the fact that what they did ultimately select and use with great benefit was lecithin. Lecithin is a complex phosphorised fat, which occurs in many parts of the organism, particularly in brain tissue (where it varies from 9 to 17 per cent), in yolk of egg, milk, &c. On decomposition it yields stearic acid, cholin, and glycerophosphoric acid, this being the way in which it disposes of its phosphorus (Halliburton¹). Dr. Narbel got the lecithin supplied him from Paris in sealed tubes, and administered it by subcutaneous injection, 1 grm. at a time. The results obtained were very gratifying, and now, after a trial of several years, Professor Combe and he are satisfied of the great impetus this substance gives to nutrition. I may say that for some time past this fact had been known, and demonstrated experimentally, by Danilewsky in the case of tadpoles, and Selensky in that of puppies.

Lecithin is prepared commercially from egg-yolk, and can be procured from the Chemical Specialities Company in London.

The fact that it is present in yolk of egg had already led Muggia to employ this substance for subcutaneous injection; it must be used fresh and raw, as the lecithin is largely lost by cooking. Combe and Narbel, however, think it much better to use the lecithin itself.

In connection with the use of egg-yolk, it is interesting to recall the fact stated by Bunge, that there are few natural foods so rich as it is in lime-salts. It is thus a valuable adjunct to the dietary of the rickety child, and a useful, agreeable food, which goes under the name of "lait de poule," can be made by beating up the yolk of an egg or two with a little hot water, sugar, some simple flavouring water, and, in cases of great weakness, 30 drops of cognac or rum.

I must not, however, trespass further on your time or patience. It is, of course, impossible to cover anything like the whole question of infant-feeding in a short paper like this, nor had I any intention of attempting to do so. What I have tried to do is to bring before the Fellows some fresh aspects of this subject, and to show that, even in a topic so old and well-worn as the nourishment of the young, there is no such thing as finality.

¹ Halliburton, *The Chemical Side of Nervous Activity*, 1901, p. 12.

CASE OF PUERPERAL ECLAMPSIA COMPLICATED
BY HEMIPLEGIA.

By S. L. CRAIGIE MONDY, M.R.C.S. Eng., L.R.C.P. Lond.

A SINGLE woman, about six months pregnant, had seemed very drowsy all day on 30th November, 1902, but spoke fairly freely to those around until the evening. She was expecting to see the father of her child at 9 P.M., but as he did not call she went to bed about 10 P.M., apparently very much disappointed. At 2 A.M. the next morning (1st December) she had a fit, and became comatose. Dr. Lawton, by whose courtesy I am enabled to publish these few notes, was called in to see her during the day. He found her having more fits, and examined the urine, which was free from albumen, but loaded with urates. The pulse ranged from 65 to 70 per minute, and was full and bounding. There was no fever. Dr. Lawton prescribed trinitrin. The fits continued all day, and at 10.30 P.M. the doctor was sent for again. He asked me to see the patient for him, after explaining to me how he had found her. When I arrived she was still having fits, and was quite comatose. The fits were becoming practically continuous, and affected the whole body. I at once decided to give labour a start, having obtained Dr. Lawton's permission to do so if I thought it necessary. With this object in view, I made a vaginal examination to see how matters stood, and found that the external os just admitted my index-finger with a little pressure. I forced the finger well through the os, and swept it round the lower segment of the uterus, separating the membranes as high as possible. This done, I thought it might be left to nature to finish the labour. As she had another fit after my examination, I administered chloroform, and after waiting some time without a recurrence of the fits, I left her, telling the relatives to send in the night if she became any worse.

On 2nd December, at 4.30 A.M., I was informed that there had been no fits till 3 A.M., since when, however, there had been three. As labour had apparently proceeded no further, I told them to keep a sharp lookout on her until Dr. Lawton called, which he did about 9 A.M. He found that the fits were again coming on frequently, so he came and asked me to go with him with the object of performing rapid dilatation, and delivering under an anæsthetic. Dr. Lawton administered chloroform, and I proceeded to dilate digitally. The os was

no more dilated than when I left her the night before. After about three-quarters of an hour I was able to get two fingers far enough through the os to get hold of a leg, which I at once brought down into the vagina; and then I continued to dilate till at the end of about an hour and a quarter I was able to get all but the head through the os. About five minutes later the head followed, and the child was delivered (dead). I then rapidly removed the placenta. Just as labour was finished, and the patient was coming out of the anæsthesia, she had another slight fit, but a few inhalations of chloroform stopped it. There was no abnormal hæmorrhage, and I may here mention that the lochia throughout were quite normal. During the next twenty-four hours the bowels acted several times and she passed urine frequently, both unconsciously.

On 3rd December, at 11.30 A.M., it was observed that the pupils reacted to light, and that the conjunctival reflex was readily obtained. The urine (drawn off by catheter for examination) was still loaded with urates, and free from albumen. The pulse was full, and numbered 70 per minute. At 2 P.M. the fits began again, and continued on and off all day and night. She was given half a grain of morphinæ sulph. hypodermically in the afternoon. Food could only be got down in very small quantities at a time. She was given 1 oz. mist. sennæ co. every four hours, but without any good evacuation of the bowels.

On 4th December she was given 2 minims of ol. crotonis as the bowels had not acted, and this produced a very free evacuation. At night she had two more fits in my presence, for which I administered chloroform.

On 5th December the pulse was more rapid—80 per minute—and in the evening fluctuated between 80 and 100, but it was still steady and full. Respiration up till then had been heavy, slow, and snoring, but it then became less noisy, easy, and regular—16 per minute. The fits, however, still continued, and she remained semi-comatose. The pupil and conjunctival reflexes were still obtainable. She was then given—

Rx.—Chloralamid (in S.V.R.),	. . .	5 grs.
Potass. bromid.,	. . .	10 grs.
Aquæ chlorof.,	. . .	2 drs.

Sig.—Every two hours.

This at once lessened the violence of the fits, and also their frequency, and the patient became less restless. She was put into blankets, but did not perspire, though she remained quite warm. Throughout the day both eyes had deviated to the

left, but it was only late in the evening that any signs of rigidity were discerned. Even then it was doubtful, but the left arm and leg seemed somewhat more rigid than on the right side, and in conjunction with this it was noticed that the fits were less violent, and confined to tonic and clonic spasms of the facial muscles.

6th December (11:30 A.M.)—There had only been one very slight fit during the previous fourteen hours, viz., at 3 A.M., and the patient showed signs of a return to consciousness, but there was distinct paralysis of the facial muscles on the left side and of the left arm and leg. On the whole, but for this paralysis, the general condition seemed better. In view of the paralysis, an evaporating lotion was given to be applied to the head, as she constantly knocked an ice-bag off. She was again given mist. sennæ co., and the chloralamide mixture was continued. At 9 P.M. the pulse was 80, and the respirations 18 per minute, steady and free from snoring. The colour of the patient was good. The urine was still passed under her, as also the motions when the bowels acted. There was, however, slight constipation. A return to consciousness seemed still more marked. When told to do so, she put out her tongue, shook hands (right hand), and moved her right foot, but there was a good deal of hesitation in this last act. When asked if she had any pain, she gave out a long drawn, somewhat indistinct "No." She swallowed her milk and medicine readily, though she slightly resented the "black draught."

7th December (11:30 A.M.)—The patient had had five fits—the fits being confined to twitchings of the muscles of the face—between 5:30 A.M. and 10:40 A.M. Pulse 100, but fairly good. The respirations were deep, steady, and 18 per minute. She put out her tongue, smiled—the right side of her face being drawn up—shook hands, and moved her right foot quite readily when asked to. In respiration the left cheek was blown out and sucked in. She took her food and medicine well. At 8:30 P.M. the pulse was 132 per minute and weak. Respirations, 18 per minute and shallow. As her bowels had not acted I gave her a rectal injection of 2 oz. of glycerin, which caused two evacuations in twenty minutes. The fits were then becoming almost continuous again, but were still confined to twitchings of the facial muscles.

8th December (11:30 A.M.)—She was still comatose. The fits had continued throughout the night, following one another very closely. The pulse was imperceptible, the respirations sighing, and she was very cyanosed. The mouth was now drawn over to the left side, perspiration was profuse, and she

had passed her urine and motions under her. It was impossible to get her to take food or medicine. The pupils were both slightly dilated. The last fit was at 10.30 A.M., and she passed away in my presence at 12.30 P.M.

The peculiar features of this case were the absence of albuminuria whenever the urine was examined, and the complication by hemiplegia. During the whole time she only spoke once, and that in answer to my enquiry if she had any pain. There was no œdema anywhere, but her face seemed somewhat puffy.

I have seen one other case of eclampsia since I have been in practice, but in that case the patient recovered. There the urine was very albuminous. The patient was delivered (child dead) under chloroform at full term, and was kept freely purged.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—List of Degrees in Medicine conferred on 21st April, 1903:—

DOCTOR OF MEDICINE (M.D.)

William Russell, M.B., C.M., Scotland. *Thesis*—"Summer Diarrhœa: Its Causes and Prevention."

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

John Andrew Aitken (c).
 James Montgomery Anderson (P).
 John Anderson, M.A. (B, Z).
 Thomas M'Call Anderson (Z).
 Andrew Hamilton Arnott (c).
 David Arthur (B, Z).
 John Atkinson (Z).
 Edgar Barnes (Z).
 Herbert Bertram (Z, c).
 John Henry Bisset, (B, Z, P, c).
 James Nimmo Brown, M.A. (Z, c).
 Murdo Buchanan (P).
 James Cairncross (B, P).
 James Cairns (Z, c).

Thomas Hay Campbell (Z, c).
 Matthew Ignatius Thornton Cassidy (Z, c).
 John Sawers Clark (B).
 Alexander Beck Cluckie (P).
 Alexander Johnston Couper (B, P).
 James Robert Craig (Z).
 Charles Adolphus Crichtlow (Z, c).
 Alexander Dick (B).
 John Alexander Doctor (Z, P).
 Robert Donald (B).
 James Richan Drever, M.A. (Z).
 James Dunbar (P).
 Donald Duncan (Z, c).

Allan Dunsmuir (B, P).
 Leonard John Dunstone (Z, C).
 William Marley Elliott (Z, C).
 Archibald Fairley (Z).
 Samuel Nichol Galbraith (Z, C).
 Berkeley Gale (Z).
 Alexander Thomas Arthur Gourlay (Z).
 Henry Maxwell Granger (P).
 John Vincent Grant (Z).
 Percy Frederick Grant (P).
 Thomas Purdie Grant (Z, C).
 William Cooper Gunn (Z).
 John Hammond (C).
 Thomas Harkin (B, P).
 John Mitchell Henderson (Z, C).
 Andrew James Hutton (Z, C).
 Percy James Kelly (P, C).
 George Ligertwood (B, Z).
 Daniel Conway M'Ardle (Z).
 Ernest Bowman Macaulay (P).
 Alexander M'Call (B, P).
 Thomas M'Crick, M.A. (B, Z).
 Alexander Tulloh Inglis Macdonald (Z, C).
 James M'Donald (Z, P).
 John Robert M'Gilvray (B, P).
 Robert M'Inroy (B).
 Joseph Bogue Mackay (Z).
 William Anderson M'Kellar (C).
 Thomas Cooper Mackenzie (C).
 William Ferguson Mackenzie (B, P).
 Allison David M'Lachlan (B, P).
 Arthur Norman Roy M'Neill (Z, C).
 David Manson (Z, C).
 Isa Carwell Marshall (Z, C).
 Robert Marshall (P, C).
 James Hogg Martin (Z, C).
 David Rogerson Mathieson (C).
 Horatio Matthews (B, P).
 John Clark Middleton (Z, C).
 John Wilson Miller (Z, P).

Robert Stewart Miller (B, C).
 James Robertson Mitchell (B, P).
 Hugh Walker Moir (P, C).
 Hugh Morton (Z, P).
 Robert Charles Muir (Z, C).
 Arthur Alexander Murison (B).
 Patrick O'Brien (Z, C).
 John Oswald (C).
 Isaac Papiermeister (Z, C).
 Donald Renton (B, Z).
 Murdoch Mann Rodger (C).
 William James Rutherford (P).
 Alexander Scott (Z, C).
 Robert Ephraim Selby (Z).
 Alfred Cecil Sharp (B, Z, P, C).
 John Sharp (P).
 Alexander Hunter Sinclair (P).
 John Steedman (Z).
 James Alexander Stenhouse (Z, P).
 Campbell Kay Stevenson (Z, C).
 William Stevenson (B).
 Archibald Stewart (C).
 John Torrance Weir Stewart (C).
 Matthew John Stewart (Z, C).
 John Anderson Struthers (Z).
 John Martin Taylor (Z, C).
 Hugh Johnstone Thomson (Z, C).
 Robert Todd (C).
 Martin Turnbull (B).
 Hugh Watson (P, C).
 William Barrie Watson (B, Z, P, C).
 Thomas Charles Dalrymple Watt (B, P).
 John Weir (Z, C).
 James Kennedy Welsh (C).
 Hugh White (B, P).
 David John Williams (B).
 Frank Ritchie Wilson (Z, C).
 Hugh Mundle Wilson (Z).
 William Mitchell Turner Wilson (B, P).
 Garabed Yeghia Yardumian (Z, C).
 Matthew Young (Z, C).

WOMEN.

Annie M'Crorie (P, C).
 Janet Annie Macvea (C).

Jane Isabel Robertson (P, C).

Mr. Ernest Milton Watkins has passed the third professional examination for the degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) in the subjects of (a) Regional Anatomy and (b) Materia Medica and Pharmacy.

The following have passed the second professional examination in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

Scott Campbell Adam (M).
 George Allison Allan (A, P).
 William Smith Allan (A, M).

Andrew Allison (A, P, M).
 Andrew Woodroffe Anderson (A).
 James Henderson Baird, B.A. (A, P).

- Hugh Barr (A, P).
 Andrew Baxter (A).
 George Duncan Morrison Beaton (M).
 Charles Burns (M).
 Thomas Murdoch Campbell, M.A. (A).
 Charles Game Angus Chislett (A).
 Thomas Goodall Copestake (P).
 Weir Burns Cunningham (M).
 Robert Wilson Dale, M.A. (A, P, M).
 Robert Scott Dewar, M.A. (A, P, M).
 Allan Campbell Douglas (A, P).
 Walter Duffy, M.A. (A, P, M).
 John Shaw Dunn, M.A. (A, P).
 Eric John Dyke (A, P).
 Hamilton William Dyke (A, P).
 James Fairley (A, P, M).
 Harry Prescott Fairlie (A, P, M).
 Alexander Burns Ferguson (A, P, M).
 Edward John Fitzgerald (M).
 William Gilchrist (P, M).
 Joseph Glaister (M).
 Alexander Graham, B.Sc. (A, P).
 William Grier (A, P).
 Frank Hauxwell (A).
 James Waugh Hay (A, M).
 Robert M'Cowan Hill (P, M).
 Ralph Vincent Howell (A, M).
 David Guthrie Hunter, M.A. (A, P).
 Arthur Innes (M).
 William Boyd Jack (A, P).
 James Rutherford Kerr (M).
 George Notman Kirkwood (M).
 William Love Kirkwood (A, P).
 George Hugh Logan (P, M).
 John Bertram M'Cabe (A).
 Thomas M'Cosh (A, P).
 Walter George Macdonald, M.A. (A, P, M).
 Hugh Allan Macewen (A, P).
 John Macintyre (P, M).
 Roderick Macleod (A, P).
 William Macleod (P).
 John M'Millan (A, P, M).
 Matthew Thompson Drummond M'Murich (A).
 Richard Cameron Macpherson (A).
 Peter Maguire (A, P, M).
 James Marshall (A).
 William Blair Morton Martin (M).
 Robert May (P).
 Henry Joseph Milligan (A, P, M).
 David Robertson Mitchell (A, P, M).
 William Struthers Moore (A, P, M).
 Gavin Denholme Muir (A, M).
 Frank Anderson Murray (M).
 Patrick Joseph O'Hare (P, M).
 Henry Sherwood Ranken (A, P, M).
 Cunison Deans Rankin (A, P, M).
 Thomas Thomson Rankin (A, P).
 James Mill Renton (A, P, M).
 Arthur Robertson (A, P, M).
 William Rolland (A, P).
 John Macdonald Ross (M).
 Alexander Cappie Russell (A, P).
 John Cooper Russell, M.A. (A, P).
 John Samson (A).
 Edward Louis Augustin Sieger (A, P, M).
 William Hermann Sieger (A).
 Robert Wilfrid Simpson (A, P, M).
 James Alexander Somerville (A).
 Daniel Stewart (A, P).
 Thomas Strain (A, P).
 William Alexander Stuart (A, P).
 John Taylor (A, P, M).
 William Robb Taylor (M).
 Thomas Thom (A, P).
 William Lind Walker, M.A. (A, P).
 George Wallace (M).
 Alexander Macmillan Watson (P).
 Archibald Crombie West (M).
 James Wyper (A).
 George Young (A, P).

WOMEN.

- Bertha Shanks Alexander (A).
 Jeannie Thomson Clark (A, P).
 Mary Theresa Gallagher (P).
 Elizabeth Maud M'Vail (A, P, M).
 Margaret Walker Miller (A).
 Jessie Deans Rankin, M.A. (A, P, M).
 Mary Spence (A, P, M).
 Annie May Yates (A).

The following have passed the third professional examination in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

- Archibald Craig Amy (P, M).
 Henry Graeme Anderson (P).
 James Richard Sumner Anderson (M).
 John William Arthur (M).
 David Blackley (P, M).
 Forrest Brechin (P, M).
 Charles Brown (P, M).
 George Yuille Caldwell (P, M).
 Peter Carrick, M.A. (P, M).
 Robert Buchanan Carslaw, M.A. (P).

Robert Penloe Cartwright (P).
 James Alexander Cowie, B.A., B.Sc.
 (P, M).
 David William Davidson (M).
 Thomas Thornton Macklin Dishington
 (P).
 Hugh M'Millan Donaldson (M).
 Charles Milligan Drew, M.A. (P, M).
 Hugh Harvey Fulton (P).
 George Garry (P).
 James Gemmell (M).
 William Harold Gillatt (P, M).
 William Macmillan Gilmour (P, M).
 David Livingstone Graham (P, M).
 John Graham (P, M).
 George Munn Gray (P).
 Louis Leisler Greig (P, M).
 John Cochrane Henderson (P, M).
 Alexander Jamieson (P).
 Robert Dallas Kennedy (P, M).
 John Kerr (M).
 William Henry Kirk (P, M).
 Robert Thomson Leiper (P, M).
 William Jamieson Logie (P, M).
 Thomas Symington Macaulay (P, M).
 John Duncan M'Callum, M.A. (P, M).
 Donald Carmichael M'Cormick (P).
 Neil M'Dougall (M).
 James Boston M'Ewan (P, M).
 Tom Duncan M'Ewan (P).
 Duncan Macfadyen (P).
 John M'Farlane (P).
 Robert Maxwell M'Farlane (P, M).
 Robert Clark M'Guire (P, M).
 James M'Houl (P, M).
 Milne M'Intyre (P).
 Ronald Mackinnon (P).

David James M'Leish M.A., B.Sc.
 (P, M).
 Norman Alexander Macleod (M).
 Andrew Brown M'Pherson (P, M).
 Andrew Meek (P, M).
 Peter Millar (P, M).
 John Muir (P, M).
 Macdonald Munro (P, M).
 George Clement Nielson (P, M).
 Thomas Orr (P).
 Howard Henderson Patrick (P).
 John Clegg Pickup (P, M).
 Alexander MacMillan Pollock (M).
 Andrew Maclean Pollock (P).
 James Porter (P).
 William Murdoch Rae (M).
 Donald Ronald Reid (P, M).
 Daniel Stevenson Richmond (M).
 Berkeley Hope Robertson, M.A.,
 B.Sc. (P, M).
 Robert Thin Craig Robertson (P, M).
 George Goldie Smith, B.Sc. (P).
 John Stewart (P, M).
 Norman Burgess Stewart (P, M).
 William Craig Stewart (P, M).
 Murray Ross Taylor (P, M).
 William Templeton (P, M).
 James White Thomson (P).
 William Young Turner, M.A. (P, M).
 Hugh Fleming Warwick (P).
 Robert Watson (P).
 Archibald Crombie West (P, M).
 Archibald Simpson Wilson (P, M).
 David Watson Wilson (P).
 George Wilson (M).
 Robert M'Nair Wilson (P, M).
 Watson Young (P).

WOMEN.

Annie Agnes Baird, M.A. (P, M).
 Annie M'Caig Black (P, M).
 Roberta Campbell (P).
 Ethel Lily Chapman (P).
 Jane Hamilton M'Ilroy, M.A., B.Sc.
 (P, M).

Jane Stark M'Lauchlan (P, M).
 Charlotte Reid Park (P).
 Jane Reid Shaw (M).
 Lily Smellie (P, M).
 Elizabeth Taylor Talbert (P, M).

At the recent professional examinations for the degrees of M.B., Ch.B., the following candidates passed with distinction in the subjects indicated:—

First Examination.—*In Botany and Zoology:* Thomas M'Cricrick, M.A. *In Botany and Physics:* Horatio Matthews. *In Zoology:* David Arthur, Edgar Barnes, Herbert Bertram, James Cairns, Matthew Ignatius Thornton Cassidy, Charles Adolphus Crichtlow, Alexander Tulloh Inglis Macdonald, John Clark Middleton, John Steedman, Matthew John Stewart, John Martin Taylor, Hugh Johnstone Thomson, Frank Ritchie Wilson, Matthew Young. *In Physics:* James Cairncross, Robert Marshall, Alfred Cecil Sharp, John Sharp. *Second Examination.*—*In Anatomy and Physiology:* John Shaw Dunn, M.A. *In Anatomy:* Robert Wilson Dale, M.A.; Alexander Cappie Russell, Thomas

Thom. *In Physiology*: George Allison Allan, William Boyd Jack, Walter George Macdonald, M.A.; Henry Sherwood Ranken. *In Materia Medica and Therapeutics*: Arthur Innes, William Blair Morton Martin.

Third Examination.—In Pathology: Robert Buchanan Carslaw, M.A.; Hugh Harvey Fulton, George Munn Gray, John M'Farlane, Donald Ronald Reid.

NEW PREPARATIONS, &c.

VALENTINE'S MEAT JUICE (Valentine's Meat Juice Co., Richmond, Virginia, U.S.A.).—We have received samples of this well-known preparation, which is obtained from meat by pressure. It contains albumen in solution, and is thus coagulable by heat. It is therefore recommended that the meat juice should be taken mixed with cold or with tepid water. Even with hot water, however, though the albuminous constituents may be less easy of assimilation than in the uncoagulated condition, an agreeable beef-tea may be obtained. Admixture with acids and with alcoholic drinks is inadvisable. The 2-oz. bottle of this meat juice, which was first produced in 1871, contains the concentrated juice of 4 lb. of beef without fat, or the condensed essence of 1½ pint of liquid juice obtained from beef. As an easily digested and easily assimilated nutrient and stimulant, few things are likely to rival Valentine's meat juice.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1902-1903.

MEETING VI.—19TH DECEMBER, 1902.

The President, DR. W. G. DUN, in the Chair.

ADJOURNED DISCUSSION ON ANÆSTHETICS.

Dr. Home Henderson said—As one who is engaged in the daily administration of anæsthetics, I may be allowed to make some remarks in continuation of this discussion. *Dr. Lamb*

has shown in his excellent opening that we have now a large choice of anæsthetics—nitrous oxide, ether, and chloroform, given alone or in various combinations and mixtures.

A discussion such as this would lead to much good were the outcome some broad general rules or principles which might guide one in their selection.

It is impossible here to traverse the whole field of reasons for selecting *one* anæsthetic in preference to another, or the most suitable *mode* of administration, in the different classes of patient and operation. With Dr. Lamb in his general recommendation of a *mixture* of ether and chloroform in place of chloroform *as the routine anæsthetic* I quite agree, but, in light of improved apparatus, I may mention, briefly, one or two groups of cases where there may be reasons for modifying, at least, one's usual practice, and where there is considerable scope for employment of some of the newer *methods*.

In the first place, I would refer to *short cases*, by which I mean cases requiring five or ten minutes' good anæsthesia, precisely those in which it is the custom to give just a whiff of chloroform.

While accidents occurring during anæsthesia are always regrettable, none are more so than when the operation is a trivial one.

It is in this class of case, then, nitrous oxide is perhaps the most suitable. Nitrous oxide given alone is only adapted for the shortest operations—not more than forty seconds anæsthesia being available; with the addition of oxygen, however, as Dr. Boyd described last Friday, the anæsthesia may be maintained with ease and safety for several minutes.

Any new apparatus which aims at greater simplicity in the mode of administration is a step in the right direction, and, as such, I would draw attention to Dr. Flux's apparatus for the continuous administration of gas with *air*. It permits a sufficient supply of air to be inhaled with the gas, thus removing all tendency to asphyxial conditions.

I have used it very largely, and find it in most cases quite equal to gas and oxygen—the patient maintaining a healthy colour throughout, the recovery being quick, and, as a rule, without unpleasant after-effects.

My cases have mostly been short, averaging three to four minutes, the longest, eight minutes, being an operation for fistula in ano. It is only for operations of that duration, however, that nitrous oxide with oxygen or air should be employed. Apart from difficulties in the way of preventing the gas from freezing in the cylinders, and the expense of

using a large quantity of gas (50 gallons or more in fifteen minutes), in long administrations, gas comes down in point of safety to near the level of the other anæsthetics, as shown by a few cases, recently reported, of evident sudden cardiac dilatation.

Compared with gas and oxygen, gas and air uses up rather more gas, and it is not quite so easy to maintain an even anæsthesia, but being among the first apparatus of its kind, and involving a new idea, it cannot be expected to be perfect, and will, doubtless, be improved.

Carrying out the same principle of administering air with gas, Paterson's apparatus for the continuous administration of gas by the nose in *dental* cases has gone a long way to exclude the more dangerous anæsthetics from this class of operation. By this method the gas enters by the nose and sufficient air by the mouth to prevent *cyanosis*. One can generally count on getting three to four minutes' anæsthesia, and, if necessary, it can be prolonged for a few more. In several cases I have kept it up for ten minutes.

Like most prolonged gas anæsthesias, however, you cannot always rely on a perfectly quiet one. It is sometimes difficult to get a sufficient supply of gas through a nose where there is some obstruction, and in some vigorous adults with no obstruction the varying proportions of gas and air are such as to excite restless movements, and in some, *very* few, the ordinary anæsthesia cannot be prolonged at all.

But, *on the whole*, in the *great majority* of cases the anæsthesia can be sufficiently prolonged by this method to enable most *dental* operations to be performed.

Where for any reason gas is unsuitable, in no class of case is the indication so strong for ether, or at least a mixture with a large proportion of ether.

In dental operations—out of all proportion to others—accidents occur with chloroform, which, although the best anæsthetic undoubtedly for most operations about the head and neck, is particularly unsuited for this class. Whether this be from the faulty position of the patient in that he is often not strictly recumbent, or the raising of the head to get at lower teeth, or the pressure on the lower jaw interfering with respiration, or from shock, seeing that much of the operation, and that an exquisitely painful one, frequently takes place during returning consciousness—whatever the cause, none of them induce dangerous symptoms with ether. A light ether anæsthesia is perfectly safe, and temporary interference with respiration does not cause that dangerous

fall of blood-pressure which occurs during respiratory embarrassment or struggling under chloroform, and which is regarded by most as the cause of all the trouble with chloroform.

With the patient put thoroughly under ether, an absolutely quiet anæsthesia of five or six minutes can usually be relied on, and if insufficient, it can, with perfect safety, be re-administered.

For six years now, both in the Dental Hospital and in private, I have administered ether for dental cases, the patient generally, too, in the sitting posture, without any serious incidents. This position in short *ether* cases may be regarded as perfectly safe, and is of great convenience to the operator.

There are few contraindications to the use of ether which will outweigh the advantages to be gained by its administration in *dental* cases.

There are only two other groups of cases on which I will touch, where departure from the routine of giving chloroform or mixtures is strongly to be advised.

One of these is *rectal cases*, and a word or two will suffice. Since it is of the first importance in chloroform administration that the respiration should be free and unhindered, as embarrassment would lead to that source of danger, a sudden extra fall of blood pressure, in rectal cases one can seldom avoid this risk with chloroform. The breathing is usually of a stridulous, jerky character, indicating a partially closed glottis, partly due to the *lithotomy* position and Clover's crutch, and partly reflex, from the sensitive nature of the parts operated upon. The sphincters here, like those of the bladder, are late in losing their reflexes, and if *chloroform* be used the patient must be put uncomfortably near the border-line. Hewitt puts the loss of the bladder, rectal, and peritoneal reflexes, as beginning the fourth or last stage of anæsthesia. Ether can be pushed in these cases with much greater safety, though a lighter anæsthesia fulfils most requirements.

The other group about which I wish to say a word is the large and important one, viz., *abdominal sections*.

From the nature of the operation, chloroform has always been held to be the proper anæsthetic, owing chiefly to the *quietness of the respiration* and the *greater relaxing effect* on the abdominal muscles.

Ether, on the other hand, causes deep, hurried respirations, and fails to overcome muscular rigidity. This is quite true of ether given, as most frequently it is, by the Clover's inhaler, an inhaler which cuts off entirely the supply of air. A quiet ether anæsthesia can be obtained by the use of an Ormsby's

inhaler, or some of its modifications, which has a slot allowing a small supply of air. So also, too, the rigidity can be overcome if the ether be pushed at the beginning, or the anæsthesia is commenced with chloroform or a mixture, or if a little morphia be previously injected, and when once overcome does not usually return. Most of the alarming symptoms during chloroform administration in this class occur during the manipulation and displacements of intestines and other abdominal organs—more especially the stomach—partly doubtless reflex, and partly to more or less mechanical interference with respiratory action. Even if ether be not administered throughout, its use during these manipulations, at least, is a source of great comfort to the anæsthetist. Another factor which prevented its being much used in this class was the frequency of respiratory after-effects and the cough induced, which would tend to undo the surgeon's work.

But, owing to the same improved methods of administration, *avoiding saturating* the patient with ether—the common mistake of the inexperienced—*preventing undue exposure* both during and more especially after the operation, and in view of the fact that the patient's temperature falls from two to four degrees in a prolonged operation, seeing that the temperature of the room to which he is taken is not much below that of the theatre, withholding its use in patients having any acute or marked chronic inflammatory affection of the air-passages—if attention be paid to these points respiratory after-effects may be almost entirely discounted.

Thus, none of the old objections to its use in this class of operation now remain, and the advantages are such as to relieve both the surgeon and anæsthetist of much anxiety.

The only other point to which I will allude, and that very shortly, is with reference to the most suitable anæsthetic for children. Children, probably, do bear chloroform better than adults, but entirely from the fact that in them are seldom found those conditions of disease and degeneration of heart and vessels and other organs which are undoubted sources of danger. At the same time, children seem to be peculiarly liable to *shock*, and in severe operations, such as those on the larger joints and abdominal cavity, this is particularly noticeable.

Children show, too, great *susceptibility* to the action of chloroform, especially very young children, and in them it is often difficult to maintain an even anæsthesia—the conjunctival and corneal reflexes, and other signs which guide one with older children and adults, are of little use—the child is

apparently well under when he wakes up with a cry or laryngeal spasm and inconvenient movements.

In the Sick Children's Hospital, in the course of the last few years, I have tried various anæsthetics and mixtures, including A.C.E. The one found most satisfactory was equal parts of chloroform and ether, but if the operation was severe or prolonged, or the child very delicate or weakly, an increased proportion of ether, such as 1 to 2, gave better results. A mixture of equal parts has the advantage that no apparatus is necessary; it may be given, to children at least, in the same way as chloroform.

The addition of ether to the chloroform causes a deeper respiration, which cannot be so easily mistaken for natural sleep, the interval between loss of consciousness and surgical anæsthesia is lengthened, *i.e.*, children don't go under suddenly, but stop crying and struggling some time before they are deep enough for operation—they stand the operation better at the time, and afterwards have less tendency to shock and collapse.

There are many other groups of cases and various conditions of disease which also have to be taken into account, and to which others will doubtless refer.

I have mentioned only a very few points on the fringe of the large question which Dr. Lamb has opened up—the selection of the anæsthetic—but, I think, it is by the *thoughtful selection* on some such clinical grounds, and by giving *intelligent* and *undivided* attention to the administration, that the safety of the patient, the convenience of the operator, and the anæsthetist's own mental comfort will best be attained.

Dr. J. Crawford Renton said—I am quite satisfied that special instruction ought to be given in the administration of anæsthetics, and I have adopted this since my appointment as surgeon to the Western Infirmary. I have tried all the anæsthetics, both local and general. As regards the local, there is no doubt that chlor-ethyl is of the greatest value in minor operations, such as removal of nails in cases of onychia, opening abscesses and whitlows, as also in cases of empyema and urgent cases of abdominal section and strangulated hernia. I quite agree with Dr. Knox as to the importance of not operating in cases of empyema with a general anæsthetic, as it is most dangerous, and I always use chlor-ethyl in cases of empyema in order to evacuate the pus, and a few days after resect portions of ribs under chloroform where such is required. Regarding cocaine I have been disappointed with it, but eucaïne I have used with benefit. In general

anæsthesia I made use entirely of ether for one year—except in the cases of old people—and where the anæsthetist was thoroughly trained, and had had considerable experience in the giving of ether I was satisfied, but for regular use I have come to the conclusion that chloroform, efficiently administered, is the most satisfactory general anæsthetic, with the addition of ether when required. It is not the special inhaler that is used, but it is the administrator who is behind the inhaler upon whom we are dependent for results, and I was glad to hear a man with the experience of Dr. Knox so decided as to the value of chloroform, as also dwelling upon the importance of giving the anæsthetic until the patient is under its influence, but not poisoning him with the drug. I gave chloroform as an assistant myself for a long time, and my own assistants have given it for years, and I cannot remember the use of the gag being required, and only in exceptional circumstances has the tongue required to be gently drawn forwards by a pair of artery forceps. I deprecate very seriously the tendency of the present giving of chloroform to the extent that the tongue must be drawn forward and a gag introduced into the mouth. I know of no anæsthetic so generally useful in children. In changing a dressing a few whiffs of chloroform deprives the the child of the fear of the dressing being removed, and the amount required is not sufficient to disturb digestion.

As regards the removal of tonsils and adenoids, I have never had a moment's anxiety in using chloroform when the anæsthetic was carefully given, and as chloroform has served me well, I have not seen fit to give it up.

Chlor-ethyl, I know, has been used to a considerable extent, and I have tried it, as also ethyl-bromide, but as my experience of these is limited, I give no opinion with regard to them. With reference to inhalers in the giving of chloroform, I have personally a strong liking for Allis's inhaler when used by a thoroughly trained anæsthetist, and I have never seen any occasion to alter this, but I have seen a number of occasions in which I wished that the person using Allis's inhaler had had a little more experience in the use of it. The smallest amount of chloroform that will bring a patient under its influence and will keep him non-sensitive to pain is the safe dose, and the shorter time a patient is under the influence of this poison the better for the patient. I have always advocated operations being as short as possible, more especially in elderly people and children, and in all abdominal operations. In certain operations the division of them into two, as, for

example, in tongue cases, is accompanied by the best results, as proving that old people do not bear long operations well.

Dr. T. D. Luke said—I must express my regret at being prevented from being present at the opening meeting, but I am glad to say I have had the privilege of reading the manuscript of *Dr. Lamb's* paper, and from my own experience I can confirm all he said, I think, in every particular, and entirely sympathise with his views.

In my own practice, both hospital and private, I use ether, as a rule preceded by nitrous oxide, very largely, and find it most useful, but I trust I am in no way prejudiced in regard to it, for I have no sympathy whatever with the “one-anæsthetic” man, but consider his position quite untenable. I was much struck by, and am entirely in accord with, *Dr. Lamb's* expression of opinion on this point.

I consider that every intelligent practitioner should know something of the practical administration of the three valuable and well tried anæsthetics—nitrous oxide, ether, and chloroform. During his student days he should be instructed theoretically in their uses, and have opportunities of administering them practically. Whether a man uses them to any extent after qualifying will depend chiefly on the nature of the practice and the calls made on his anæsthetic skill.

For the man with slight experience working in the country, and who is rarely called upon to produce anæsthesia, I certainly think that some mixture, such as C_1E_2 , C_1E_1 , or C_2E_3 is best suited in every way.

I cannot say I think A.C.E. is a good mixture or a scientific one, for it is obvious, theoretically, that the chloroform and ether will evaporate much more readily than the alcohol, and the inhaler or fabric which we are using become hopelessly saturated with alcohol, and we find practically that this is the case.

In using ether or chloroform alone much judgment is necessary to properly select one's cases, and to realise when either anæsthetic is not suiting a patient, and when we should make change. For instance, one often sees the patient's pulse and respiration failing from the depressant action of chloroform, and the face and ears getting pale. No strychnine is called for, but if the chloroform is removed and ether substituted in lint or in an inhaler, the pulse will at once improve, and the breathing change into the characteristic ether type.

In such cases, if chloroform be persisted in, trouble will often arise. Again, in certain types of patients we find

cyanosis, stertor, and profuse secretion of mucus come on when ether is administered—things may get so bad that the patient becomes “waterlogged” or drowned in his own secretion; here we must withdraw the ether, swab out the throat, get *free* respiration and a good colour established, and proceed with chloroform or C.E.; did the administrator fail to see the necessity for this a fatality from asphyxia would very probably be caused.

As regards the use of chloroform, there is one operation, I must say, I feel most strongly it should never be used for, viz., the extraction of teeth. Dr. Henderson has shown us that a most excellent and safe anæsthesia, of sufficient duration for the most extensive extractions, can be provided by means of nitrous oxide, given by Flux’s or Paterson’s apparatus, or by administering gas and ether. Bearing in mind that almost all tooth extractions of any extent are operations largely of choice and not of necessity, it seems quite unjustifiable to subject the confiding patient to a risk such as we know there is and always must be with chloroform, and one cannot but deplore and feel shocked at the calamities which are recorded from time to time in the public press in this connection, patients sometimes losing their lives where only seven or eight teeth are to be extracted.

In regard to specialism, there is a general tendency towards this now in all branches of our profession, and anæsthetic specialists are on the increase. There are few operators who do not realise the advantage to themselves and the patient of having a trained and reliable man “at the wheel,” and so being freed from all care in regard to the anæsthetic.

It has been, and still is, to a large extent, looked upon as the function of the patient’s ordinary medical attendant to give the anæsthetic if one of his clients require a surgical operation; this is largely due to use and wont, but I can in no way see how a general practitioner, with a thousand and one different duties and calls on his time night and day, can be reasonably expected to skilfully administer the anæsthetic for a surgical operation of any extent, any more than he can be expected to remove the appendix, or carry out whatever special surgical procedure the occasion may require. It is in no way to be regarded as a confession of incapacity for the family doctor to decline to give the anæsthetic or to suggest the calling in of an anæsthetist to assist in tiding the patient over the crisis.

Of course, the question of ways and means will often come

in, and in some cases the practitioner will require to do his best, but when the patient is only moderately endowed with this world's goods, if the case be put to him, I think he will generally elect to go to the additional expenditure of the anæsthetist's fee, if it make the operation 20, 15, or only 10 per cent safer, and when his troubles are over, and health restored, he will, I think, look back upon those two or three extra guineas as well spent, and with no other feeling than of satisfaction.

The family doctor has his special function, quite apart from the anæsthetic or conduct of the operator; he can explain the patient's wishes to the operator in any contingency, such as cystic disease commencing in the second ovary; he can cheer the patient's friends, be with the sick man when he wakes up, and make himself invaluable in a hundred ways, as all successful practitioners know how to do.

There should, therefore, be no feeling of a new competitor or opponent on the part of the general practitioner at the advent of this new specialist, the anæsthetic specialist.

Mr. Marinaduke Shield, of the London Hospital, has most admirably summed up their respective positions, in short, "put them in a nutshell," as follows:—

"The difficulty suggests itself as to what cases or class of cases it is justifiable for a man of ordinary knowledge and experience to undertake. The answer is obvious.

"In districts remote from large cities it is the duty of every man bravely to encounter difficult and dangerous cases, and to do his best by them. In other circumstances the rule is widely different.

"If medical men were well educated in the theory and practice of anæsthesia, they would recognise for themselves that for nose and throat operations associated with severe hæmorrhage, for cases where the breathing is embarrassed by aneurism or tumour, or for prolonged abdominal operations, the administration of the anæsthetic should be entrusted to those who have given more than ordinary time and attention to the subject. The satisfactory administration of anæsthetics in many cases of disease, *e.g.*, empyema, is fraught with risk. Safety to the patient and comfort to the operator can only be insured by long experience, caution, and skill. It is quite impossible to suppose that all medical men can be educated to such a high pitch of excellence. They should, however, be enabled during their hospital career to attain a sufficient knowledge to fit them to estimate the limit of their own

capabilities, and to know when a given case is difficult or dangerous. If once the young practitioner grasps the fact that every case of anæsthesia is a study in itself, in the selection of the appropriate agent for safety and for the operator's convenience, fully appreciating that every case has its peculiar risks and after-dangers, he would continue to improve as years advance. At all events, his medical teachers will have done their duty by equipping him as well as possible for one of the most important after-duties of his professional life."

I consider that it is wrong and unjust to the public to turn out graduates and licentiates of the colleges year after year, "licensed to kill" (!), without some practical knowledge, and on this question, I think, the attitude of the General Medical Council is singularly apathetic and sluggish. Representations have been made to them as to the desirability of including some systematic instruction in anæsthetics in the ordinary medical curriculum, and enforcing the evidence of a certificate of attendance on such instructions, even though no actual examination be made or question asked on anæsthesia. But so far these suggestions have been barren of result.

The Royal Colleges of London, and even the Society of Apothecaries, have "taken the bull by the horns," however, and insist on the production of an anæsthetics certificate.

In all London schools of medicine students who so desire can get ample instruction in the administration of anæsthetics. In the university surgical classes of the Edinburgh Royal Infirmary students are afforded the same privileges.

The desirability of seeing that house surgeons have had special training is, of course, obvious.

I do not know what the practical conclusions of this discussion will be, but I feel strongly that it would be a very suitable outcome if a letter were sent, signed by the members of this Society who have been present, to the General Medical Council, stating how they consider it to be desirable that practical training in anæsthetics be insisted on as an ordinary portion of the curriculum quite as essential and more pressing than instruction in vaccination.

Dr. Freeland Fergus said that he considered *Dr. Lamb's* paper an exceedingly important contribution to the discussion of general anæsthetics. The statistics which *Dr. Lamb* had given were very striking, and were a valuable contribution to the subject under consideration.

For a considerable number of years *Dr. Fergus's* habitual

anæsthetic had been ether. Only perhaps on three or four occasions had he used chloroform and ether mixture, but apart from these instances the anæsthetic which he had employed had been ether. He generally gave it simply by itself in a Clover's inhaler, and sometimes, although rarely, this administration was preceded by the administration of nitrous oxide or of A.C.E. mixture. Dr. Fergus went on to remark that, like all his colleagues in the Glasgow Eye Infirmary, he had been brought up on chloroform. When he joined the staff it was the only general anæsthetic used, and was, he understood, still the favourite with his colleagues. He himself had been led to change from chloroform to ether on account of the relatively higher death-rate of the former. He had given ether quite freely to all sorts and conditions of patients during the last five years, and had only on one occasion seen any mischief in the lungs. The patient in that case was a young child. After the administration of ether, it developed what seemed to be a tolerably acute bronchial attack, with a temperature of 102° , but ultimately made an excellent recovery. It was, perhaps, only right, although not at all necessary, to regard the administration of ether and the illness as cause and effect.

Undoubtedly, there was a prevalent opinion that the administration of ether was apt to be followed by troublesome lung complications, and if Dr. Lamb could make good his statement that such conditions were not more frequent after ether than after chloroform, he would confer a great benefit on many surgeons.

The death-rate from chloroform was generally stated as about one in three thousand—that was the figure practically arrived at for the London schools—and that high death-rate was generally supposed in this country to exist in England, because English practitioners were not so expert in administering chloroform as their Scottish brethren. It would be within the recollection of many of the gentlemen present that the death-rate for one of the Glasgow hospitals, given by the late Professor Coats, was almost precisely the same figure, so that we need no longer suppose that there was any special immunity from chloroform deaths in Scottish practice. Dr. Fergus said that when he used chloroform he had, like his neighbours, many anxious moments. Since he began using ether he had never had occasion to lift the end of the table once.

One special improvement he noticed of recent years, namely,

that the gentlemen who now came to be house surgeons had a much better knowledge of anæsthetic work than was formerly the case. Dr. Renton, in a letter read to the Society, had said that he was in the habit of giving special instruction in his clinique in the administration of anæsthetics. In this connection it would be within the knowledge of most of the members present that many years ago Sir William Macewen had instituted a similar plan. Most of the students educated in Glasgow had now ample opportunities of studying the administration of chloroform.

It was much to be regretted that they were not given in a similar manner complete facilities for studying the administration of ether and of nitrous oxide. In Dr. Fergus's opinion, ether is undoubtedly the best general anæsthetic for short operations, such as occur in ophthalmic work. It was not absolutely free from risk, but much more safe than chloroform. So long as we were ignorant of the precise nature of the chloroform danger, every surgeon must have a most disturbing fear in using an anæsthetic which proves so often directly and mysteriously fatal.

Dr. Fergus further said he might naturally be expected to say something about local anæsthetics. He, himself, had tried eucaine, cocaine, holocaine, and one or two others, and these drugs might be used hypodermically, subconjunctivally, or in aqueous solution dropped on the part. In his experience any one of these drugs would answer the purpose well and give a reliable anæsthesia. It did not matter which was selected, but it did matter a great deal that the solution used should be freshly prepared, and should be thoroughly sterile. He thought that the compilers of the last edition of the *British Pharmacopœia* had laid much too little stress on the necessity of the sterilisation of all drops to be used in ophthalmic practice. For squint operations Dr. Fergus availed himself almost exclusively of cocaine tabloids, and they answered the purpose extremely well. He had never seen any of the serious symptoms which sometimes occur after the hypoderdic injection of cocaine. Was it possible, he asked, that when such symptoms were present they were due to a solution not freshly prepared and not perfectly sterile?

Dr. Walker Downie said—The papers read by those who opened this discussion were all of a very interesting and instructive character.

In taking part in the discussion, I will confine my remarks to

the use of anæsthetics in operations on the ear, nose, and throat. I may say at once, that when a general anæsthetic is employed, I almost invariably choose chloroform, and I have never had any cause to doubt its utility or safety. Very occasionally, and only when there are evidences of cardiac weakness, I have had ether given along with the chloroform. The anæsthetic is administered by means of a drop bottle and a mask, or a single layer of a towel, folded and so gathered together as to form a mask.

The operations being in the near neighbourhood of the mouth, I am, throughout the whole time, close to the anæsthetist, and with him can observe the action of the anæsthetic, and share with him the responsibilities of its administration.

For operations on the throat—removal of tonsils with adenoids, removal of pharyngeal and naso-pharyngeal growths, tracheotomy, laryngotomy, &c.—and for operations on the nose, where a general anæsthetic is necessary, chloroform is much more readily manipulated than ether, and, there being less venous engorgement from its use, there is less hæmorrhage during the actual operation than occurs when ether is employed.

In the use of what I might call the more evanescent general anæsthetics I have not had much personal experience; but I have seen them employed in many operations performed by others—chiefly gas, and gas with oxygen—particularly for the removal of tonsils and adenoids. The impression left on my mind, however, was not favourable towards them.

In cases where the faucial tonsils alone are to be excised, no anæsthetic is necessary in the majority of cases, but where tonsillar hypertrophy is complicated with post-nasal adenoids, then a general anæsthetic is necessary, and in making the choice, due regard must be had to surgical efficiency as well as to safety.

The hurry and excitement consequent on attempting to perform a complete operation under a short and limited anæsthesia is, to my mind, bad for the surgeon and worse for the patient.

When in London some months ago, I had an opportunity of seeing some twenty cases of hypertrophied tonsils with post-nasal adenoids operated upon in a long afternoon under gas and oxygen, and I was invited by the different operators to satisfy myself of the completeness of the removal of the post-nasal growths. In most cases the immediate local result was satisfactory, but the operation was done so hurriedly, and the resulting mess so disgusting, that I said to one of the operating surgeons, "If the patient had been your own child, would you

have permitted the operation to be done in this way?" and he said, "Oh, well, that's another story. We really haven't time." Saving of the surgeon's time appears to be a strong point with those who advocate the use of gas and bromide of ethyl for such operations. While this economy may be desirable, careful and complete performance of the operation is essential.

It is said by those who compile statistics bearing on anæsthetics, that only a small proportion of deaths under certain anæsthetics is reported. In like manner I would say that complications following those hurried operations are rarely recorded or even made known.

In the removal of tonsils and post-nasal adenoids I always have the patient well under the influence of the anæsthetic, and in the recumbent position. The operation can then be carefully and deliberately performed and completed satisfactorily, with a minimum loss of blood, and with the remotest probability of what is usually described as a "recurrence" of the adenoids. This so-called recurrence in most cases is, in my opinion, an evidence of inefficient primary operation, largely contributed to by its hurried performance.

Dr. James Adam (Hamilton) referred to ethyl-chloride as a general anæsthetic. He had given it about eighty times, chiefly for tooth extractions, but also for opening whitlows, removal of epulis, &c. It was suited for much the same kind of case as that for which nitrous oxide, with or without oxygen, was given. It was more useful, however, for (a) it was much more handy to use; (b) was swifter in action; (c) gave a longer anæsthesia.

1. A spring-top bulb, containing the drug, and a suitable mask were all that was necessary. The mask must be pressed firmly to the patient's face so as perfectly to exclude air, else anæsthesia would not result.

2. Sixty seconds was the average time necessary to put a patient "under." Sometimes forty seconds sufficed, especially when the anæsthesia was repeated after the lapse of a few minutes. Sometimes ninety seconds, rarely one hundred and twenty seconds, were required.

3. The duration of anæsthesia varied. It is to be noted that the drug is a true anæsthetic, and does not produce anæsthesia merely by abolishing consciousness. Loss of sensation to pain precedes and outlasts loss of general sensation.

If the drug be given till stertor ensues, two to three minutes'

anæsthesia may be got ; but, except in the later cases, stertor had not been aimed at, and the average duration of anæsthesia had been sixty to ninety seconds ; where a second or a third anæsthesia, after a few minutes' interval, had been induced, a two or three minutes' duration was quite usual ; and as many as eighteen dental extractions had been thus done on one patient in ten minutes. In such cases sickness is not unusual ; after single administrations it is rare.

Twice failure to procure anæsthesia had resulted from patient's excitement.

Ethyl-chloride did not seem suitable for the removal of adenoids with tonsils, at anyrate to an operator who preferred comfortable time.

The question of safety can be settled only by future experience ; but in 300 cases (including his own and those of two acquaintances) there had been no cause for fear. The after-effects are slight and very transient, though patients sometimes complain of unpleasant sensation while "going under." Those who have had both nitrous oxide and ethyl-chloride have usually much preferred the latter ; and, apart from the question of safety, the claims of ethyl-chloride are far superior, especially for the general practitioner.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1902-1903.

MEETING IX.—18TH FEBRUARY, 1903.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

I.—A SERIES OF TWENTY-SIX CASES OF EXCISION OF VARICOSE VEINS OF THE LOWER EXTREMITIES.

BY DR. ROBERT KENNEDY.

As regards the etiology of varicose veins of the lower extremities, Dr. Kennedy stated that the causes to which these were usually referred, *e.g.*, wearing of garters, constipation, abdominal tumours, pregnancy, hepatic and cardiac affections, or occupations involving long standing, were absent in his cases.

In twenty-five of his cases, in which a definite history could be obtained, varicosity appeared in six at or before the age of 10; in ten between the ages of 11 and 20; in eight from 21 to 30; and in one at 35.

On account, therefore, of the early age at which the varicosity first appeared, and of the incompetence of the valves of the internal saphena in the thigh, which was always found to be present, and also in view of the absence from his cases of any other cause adequate to explain the condition, he agreed with Bennett and others as the probable existence of a congenital defect in almost all cases of varicose veins of the lower extremities which commence in youth.

In certain cases operation should not be performed, or should be employed merely as a palliative measure, but in most cases in which varix is an independent condition commencing in youth operation should be undertaken. The operation recommended consists of extensive excision of the internal saphena, extending from a point about $1\frac{1}{2}$ inch below the saphenous opening down to the lowest limit of the chief varicose vein in the leg, any prominent tributaries in the leg being removed at the same time.

Of the thirteen cases in which this operation was done, not one had shown the slightest trace of recurrence, and in seven of these cases periods of from $1\frac{1}{2}$ to $3\frac{1}{2}$ years had elapsed since operation.

In no case did any untoward result follow the operation, and the patient, as a rule, was able to leave his bed in a fortnight.

Before adopting an operation so extensive, Dr. Kennedy had tried several less extensive procedures, viz., excision of the varices at or below the knee only, excision of the varices from the leg together with the internal saphena from the lower part of the thigh, and Trendelenburg's operation, but after each of these methods the results were defective, giving in a large proportion of the cases recurrence more or less complete after the lapse of some time. Dr. Kennedy did not recommend Schede's operation, on the ground that it could only be regarded as a palliative measure, likely to be followed by recurrence, as the pressure of the blood in the dilated internal saphena above the scar would soon open out a channel through the scar, and re-establish the pressure in the affected veins below the scar. He had also seen a case in which recurrence had taken place after this operation.

Dr. John Patrick—The results in Dr. Kennedy's operation

are satisfactory. As to the garter method used by Professor Macewen, I have seen no recurrence in eighteen months. He thought the best method would be to combine the operation of Schedé and Trendelenburg. Personally, he had done a modification in removing a part of the vein at the saphenous opening and ligaturing the saphenous vein below the sacculæ; the latter clotted, but no bad results followed.

Dr. John Anderson suggested that Trendelenburg's operation could still be done in the cases where recurrence supervened.

Dr. John C. Macewen—The garter method is still done in the Western Infirmary, and the results are good. The scar in *Dr. Kennedy's* method is very great.

Dr. Kennedy, in replying, said the patients after operation are out of bed in three weeks. One patient went off to the coast in thirteen days without permission, and one medical man operated on was cycling in the third week. There was practically no danger in the operation as now carried out. In dealing with varix at the saphenous opening, which often simulates hernia, you are better to ligature the vein at some distance, and no clot ensues as a rule. The great scar, in some cases 21 inches, is due to the length, and it is to be explained by circumferential tension, as the scar at first is thin and fine.

II.—A CASE OF DUCHENNE'S OBSTETRICAL PARALYSIS.

BY DR. JAMES DUNLOP.

Baby W., born on 1st January, 1903. The labour was long and tedious for a second case. I waited from 1 P.M. till 7 P.M., and at the mother's request I applied forceps (*Milne Murray's* axis-traction). The head came down easily, but the cord was round the neck, and so tight that I could not get it over the head.

The shoulders stuck, and traction was made on the head to deliver. The face twisted towards the left shoulder, and on account of lividity I had to hurry extraction. There was no mark on the child's head. Nothing unusual was noticed till next day, when the nurse observed that the right arm was not being used. Examination showed that it hung powerless. The sensation and warmth were normal. There was no motor power in arm or shoulder muscles till about ten days later, when some movements of the fingers were noted. The muscles of shoulder and arm were wasted and soft. The hand was rotated inwards, and the palm looked backwards and outwards. Massage and gentle rubbing produced no improvement.

The faradic current gave no response except over the petoralis major.

Diagnosis.—Rupture of fifth and sixth and perhaps seventh cervical anterior spinal roots.

Treatment.—It might have been better to bind the child's head down towards the right shoulder from birth to approximate the torn ends of nerves. Surgical treatment is now the only thing likely to be of any use.

Dr. Service referred to a case he had met with in which the child could not move the left arm fourteen days after birth. The arm was put in a sling for three months, and the child recovered the use of the arm. The probability is that there had only been a strain on the muscles or nerves although the labour was normal.

Dr. Kennedy discussed the arrangement of the brachial plexus, and located the lesion involving the fifth and sixth nerves. If recovery is to set in, it comes on early; should there be no improvement he would advise surgical treatment. You can cut down and find the nerves that are ruptured; they may, however be joined by connective tissue; this must be cut out and the three parts sutured to the two central ends. Three months are required after operation before you would expect recovery.

Note.—Since the child was shown to the Society *Dr. Kennedy* operated as above.

MEETING X.—24TH FEBRUARY, 1903.

The President, DR. ROBERT M'C. SERVICE, in the Chair.

DISCUSSION ON "THE CONSUMPTIVE POOR—WHAT TO DO FOR THEM: A PLEA FOR NOTIFICATION."

BY DR. WILLIAM FINDLAY.

Dr. Findlay's paper appears as an original article at p. 321.

The subject attracted a large turn out of members, and the discussion that followed was brimful of interest.

Dr. A. K. Chalmers said the question of notification had been raised by the sanatorium treatment within the last few

years. Referring to compulsory notification of phthisis in New York, he discarded altogether the idea that the improvement was to be traced to notification. He could speak precisely as to the death-rate being lower in Glasgow; in the last forty years it had fallen from 40 to 20 per 10,000, and this had been attained without notification. He said we know perfectly well the manner of infection from phthisis; it occurred mostly in one-room houses, and where there are damp houses and insanitary surroundings; whereas an improved sewage had lowered the death-rate. If notification were compulsory, it would raise some difficulties to be faced. Under our present system about two-thirds of the cases of phthisis were notified. The city poorhouse, the dispensaries, and general hospital cases were known. What was now wanted was the ultimate history of these cases. So far as the better class of patients were concerned, this was not of so much importance, since they took intelligent precautions to protect others from infection.

Compulsory notification, if adopted, would imply that infected persons could be sent into hospital, as was done in the case of other infectious diseases. But was there any parallelism here? These others were self-limiting in duration. Phthisis, on the other hand, was limited by the distribution of the sputum, except in those cases where there were running sores or diarrhoea. Were they prepared to provide sanatoria for all phthisical cases? Even in the third stage, where a man was dying, there was little risk if the sputum was guarded.

Dr. Chalmers did not look for the erection of sanatoria by the insurance companies in this country as in Germany, where the friendly relief system was not comparable with ours. The old age provision in Germany was aided by the State indirectly. In cases dismissed from any sanatorium, cured or improved, precautions should be adopted to prevent a person slipping back. Take the case of a tailor: he would say to him, even when dismissed, you are not allowed to go back to your former work else the disease may return to you. In these circumstances it would be a good thing if this man could be provided with a situation as gardener or rural postman.

Councillor W. F. Anderson, Convener of the Health Committee of the Corporation, contrasted the notification proposed by Dr. Findlay and the voluntary form advocated by Dr. Chalmers, especially in respect of the question compulsory

notification would imply the erection of sanatoria by the corporation. He was deeply interested in this matter. He was informed by a gentleman the other day regarding the ultimate history of twenty-seven cases treated in sanatoria that they all subsequently relapsed and died. His committee to-day had not seen their way to provide nurses to inquire into cases of consumption, but Dr. Chalmers had got power to appoint a medical assistant to trace the histories of the cases known to the sanitary authorities. He was not prepared, meantime, to commit himself to compulsory notification, and thought it would be better to isolate patients in the first and second stages.

Mr. Motion stated that every case of phthisis occurring in the City Hospital, certified by the medical staff, was reported to the sanitary authorities. The yearly average was about 250. He was in favour of some modification of notification which would not necessarily mean removal to hospital, but rather that sanitary officers and nurses could visit these homes and instruct the consumptives so as to guard the other inmates from infection; the system would be an educative one with regard to ordinary dieting, cleanliness, and the laws of health. The Parish Council were making provision in the new hospital at Stobhill for 100 cases, and all cases of phthisis in the district hospitals would be sent on to Stobhill.

Dr. Jas. W. Allan said he did not think they were ripe for compulsory notification, as the results in many ways would be far reaching, but he thought some such modified form as *Mr. Motion* had suggested might be adopted, and this would be especially valuable in the cases occurring in one-room houses, which they all knew were dangerous, and should be reported to the sanitary department. He was not, however, in favour of general notification. Our most pressing duty, he held, was to provide for advanced cases, because these cases among the poor were excluded from general hospitals and convalescent homes. They are rejected from the former on the grounds that they are dangerous to other patients, and refused admittance to the latter as they can do no good for them. He was convinced that something must be done for these helpless cases, as they were especially dangerous in spreading the disease. Glasgow in many things led the way; in this matter, however, she lagged behind, and Edinburgh had set an example in providing accommodation for the consumptive poor.

He understood that the directors of the Home for Incurables

intended to provide cottage homes for this class, but relief must be provided on a wider scale, and he thought this should be done by the Town Council.

He admitted that at present there was a tendency to exaggerate the infectivity of phthisis, and that public opinion required to be steadied somewhat on this point, but where there was an advanced case in a one-room house it was undoubtedly dangerous. We should not consider the entrance of patients through the portals of the proposed hospital as hopeless as that of Dante's Inferno. A beginning should be made in a small way. Small pavilions might be tried, to which these advanced cases might be sent, seeing they could not be admitted to a general hospital.

Dr. Lindsay Steven said that fifteen years ago pathologists were strongly impressed with the conviction that the only way to get rid of phthisis was by compulsory notification and compulsory isolation, but this was held by many as the dream of visionaries. He could not refrain from expressing gratification at the great strides made in medical opinion on this subject, when a prominent practitioner was found ably and anxiously advocating a system of compulsory notification. Theoretically, notification and detention in hospital might be regarded as in advance of the times, but he thought the day for such might yet come when this would be found to be practicable. Referring to *Dr. Chalmers'* idea of compulsory notification, he thought that this could take the form of furnishing nurses and a medical assistant to supervise treatment at home. He believed that compulsory notification was the only way in which they could efficiently deal with so widely spread an infectious disease as tuberculosis, though he was afraid public opinion was not educated up to that point. There was still the question of people not wishing to brand the family as consumptive. As to detention, the advanced cases would not stay in a place; they are always thinking they are getting better, even to the extent of preparing for a holiday a few days, it may be, before death closes the scene.

Dr. Erskine was inclined to go in for compulsory notification, but at present he thought the community had not yet reached that ideal perfection. He would go in for voluntary notification, such as obtains in Manchester. Provision should be made for hopeless cases. *Dr. Chalmers'* assistant should show how sanitary officers could or should be followed up by an organisation of ladies and nurses. The supervision of

phthisis at home would be most important. He considered that the Lanark Sanatorium should have been used for the reception of advanced, instead of early, cases. Sanatoria are doing an educative work. In France they had anti-tubercular dispensaries, and these might be adopted here.

On the motion of *Dr. Couper* it was agreed to adjourn the discussion till next meeting.

MEETING XI.—4TH MARCH, 1903.

The President, DR. R. M'C. SERVICE, in the Chair.

ADJOURNED DISCUSSION ON "THE CONSUMPTIVE POOR—WHAT TO DO WITH THEM: A PLEA FOR NOTIFICATION."

Dr. D. Couper objected to notification, said that the same argument applied to lupus and to tuberculosis of joints or mucous membranes, and held it was a serious thing for a person to be branded as a consumptive. He asked why notification should be confined to the very poor, while the rich escaped. The tubercle bacillus was equally dangerous in whomsoever found. An additional system of notification was not required in Glasgow, as two-thirds of the cases were already reported to the sanitary authorities. So far as sanatorium treatment was concerned, he had no great faith in it. The general health of the patient might be improved, but this did not alter his constitution, and his health could be improved just as well outside of sanatoria. The present idea of sanatorium treatment was extravagant and altogether misleading, and he objected to the resources of the people being charged for this.

Dr. T. K. Monro was of opinion that notification was not yet in the realm of practical politics. The necessary corollary to notification would be hospital accommodation for phthisical cases. He assumed that if hospitals were provided for consumptives it would mean considerable expense to the Corporation, and this drain on the public rates he thought the community were not yet prepared to face. He was now inclined to regard this hospital accommodation as not

indispensable; it was possible to achieve improvements in other directions. Public health arose as a preventive agency, the desire of the healthy being to save themselves from infection by the sick; hence, the community provided infectious hospitals to guard from infection, whereas tubercle is a question of sputa. It was important to observe, he said, that there was an enormous decrease in phthisis, the death-rate in England having fallen from 38 to 15 per 10,000 living. The decrease was still going on. If the rate were to be continued, it was possible that phthisis would be extinct in thirty years. It was of interest to consider how notification affected other diseases. In the case of typhus, the decrease was rather due to improved sanitary conditions. Diphtheria had increased in spite of notification. Dr. Monro personally had no objection to notification for phthisis; he held that there must be some measure of inspection of houses and sputa. He strongly deprecated the habit of public spitting, and thought that this expectoration should be made a police offence.

Dr. James Dunlop thought the gist of the matter was centred in Dr. Allan's suggestion of some hospital where the poor advanced cases could be treated. The dispensary cases were not regarded as eligible for admission to the infirmaries, and, while there, he had no alternative but to offer them the poorhouse. He would like to hear of their ultimate fate. The cubic space in Parliamentary Road Hospital was altogether inadequate for their treatment. He said it was a shame to think that if decent working-class people became infected with phthisis through no fault of their own, there was nothing for them except to be treated in a poorhouse hospital. One-room apartment occupants are the subjects of infection. He was of opinion that with this class it was not possible to guard the sputa. He held that the Corporation and the community were failing in their duty in not taking precautions to isolate those people. The Corporation should follow up the appointment of a medical inspector, which they had made, by giving him power to insist on the removal of patients if they were a source of danger and could not be satisfactorily treated at home. He suggested that an experiment might be made by fitting up some of the wards in Kennedy Street Hospital, which was standing empty. Perhaps Dr. Knight, who was present, would make the suggestion to the Corporation; it would not cost a great deal. He was satisfied there would be no difficulty in getting the men to go in, for their object in keeping away from wife and family was to save them.

Dr. McLean said his view had always been that phthisis was one of the chastisements inflicted on humanity, because of the violation of the laws of nature, and phthisis was the outcome of the manner of life. Sanatorium treatment reverted to a better condition of existence—out-door life was the true line of treatment. The nearer they could get to that condition, the less phthisis there would be. Progress was already seen in the decrease in the death-rate from phthisis, but the goal was not yet reached. He did not believe in the present method of stuffing patients with food like a Christmas goose. Out-door life and good wholesome food, such as porridge and broth, were quite as good as any treatment they had at present. He was not in favour of setting up buildings and providing hospital accommodation. The enormous expense was too great, and for this the public were not yet ripe. In scarlet fever and other infectious diseases we had a definite period of illness, but with phthisis there was no certainty how long the illness might last. The sanatorium treatment, as seen by them, was altogether unsatisfactory. Speaking of notification, he supposed that, when a case was notified, all medical men in this sense acted as missionaries in the matter of public health, and instructed the inmates as to sputa, cleanliness, opening of windows, and such like. He wished to know if, when a case was notified to the Sanitary Department, and the sanitary officer following up the case, they were to leave the case entirely to the sanitary authorities and retire.

Dr. W. Patrick remembered when the idea of consumption being infectious was scouted by all as well as by himself. Cases, however, died of phthisis, and he could find no hint of heredity. The subject, he said, who took phthisis was one who was already prepared for it as it were—there was a nidus. He thought we were not yet ripe for notification. He believed in the open-air treatment, and he did not know where it could be better carried out than in a sanatorium. He had known many cases of recovery from phthisis. One patient, now living, was instructed to take her food well, and to spend a holiday frequently in the Highlands; this was done, with excellent results. The late Professor Coats demonstrated healed tubercular lesions in the lungs of patients who had been carried off by other diseases.

Dr. J. Knight said notification should mean a diminution of disease, and our object then was to avert its ravages. Medical men were convinced, but the public have not yet reached that stage regarding infection. He held there were no reliable

data as to the relative infectivity of phthisis, and it was his belief that probably one reason for the long-held doctrine of heredity in phthisis was the occurrence of house infection. The factors operating in this disease were (1) germ causation; (2) the resisting power of the individual; (3) the circumstances under which he lived. Their aim should be to increase the resisting powers of the individual by proper attention to diet and clothing, and to modify and improve the circumstances in which he lived—*e.g.*, by inviting the people into the open air. The infectivity of phthisis compared with other diseases seemed to be relatively very small, and there was no very direct evidence that house infection existed to any great extent in Glasgow. The case for house infection would be strong if three or four of a particular family took phthisis. There were considerable difficulties in notification; much tact would be required in interfering with the liberty of the subject. There was undoubted danger in advanced cases and when the sputum was abundant. The bacilli abounded in the sputum to a much greater extent than in the bones or in discharges from wounds, but, unfortunately, we had not the same horror of spitting. With other infectious diseases, such as scarlet fever, there was no reproach, whereas consumption was not devoid of such a reproach. In the early stages, a man could go to his work; if, however, he were reported as a case of phthisis, it would be a very delicate and difficult matter to employ him until the public were better educated than at present. Notification, he thought, would not necessarily imply hospital accommodation.

Dr. Granger said that sanatoria did not accomplish all that had been claimed for them. His experience of such treatment was limited to six cases, which had returned from Quarrier's Homes as better. Of these, four died and two were dying. He found the cases did as well at home, and he did not think that, in the present state of knowledge, they were entitled to ask the Corporation or the Government to go to the expense of erecting sanatoria all over the country. Notification, he believed, would be a great help in keeping down the spread of the disease. We knew perfectly well how phthisis is spread. The very poor never took the trouble to enquire whether phthisis was infectious. In one poor case, he had found the floor covered with an inch of dust, and the patient in an advanced stage; this patient was not being attended by a doctor or by hospital visitors. He advocated notification, not for the sake of the consumptive himself, but for the purpose of keeping down tuberculosis. When a doctor was called in to see a tuberculous case, he would tell them that it was an

infectious disease. The sanitary officer would accordingly distribute literature, and this, in turn, would educate the people. The sanitary authorities had two-thirds of the cases notified from dispensaries, infirmaries, and poorhouses, but what use did they make of it? Infectivity was well seen in other towns. This was notably seen in the marked-out areas of New York. It was not necessary to have four or five householders succumbing to phthisis to show that it was the house that was infective.

Dr. Carswell said they confessed to have only a smattering of knowledge, but this encouraged them to go on. The Town Council tried to get all the information possible, and spent much time last summer over the matter, and they proceeded to investigate the whole field. They made new regulations for cow-sheds, &c.; they altered the method of meat inspection. *Dr. Koch*, however, spoiled their dreams, and we were now back to the essentials. If *Dr. Findlay* could show that compulsory notification would do any good, it would meet with support, but they were not prepared to fly in the face of public opinion. They proposed now to try and ascertain the domestic and industrial conditions of the people affected, and then consider later if compulsory notification were required. Personally, his views were that, unless they could control the consumptives more by placing them in hospital or homes, notification would not yield much. What struck him was that the phthisis-rate had gone down even before it was known to be infectious; this decrease was universal, and all over it was due to hygienic conditions. The factory workers now got a modicum of fresh air, and sanitary administration, by pointing out the value of cleanliness, &c., had not been without its beneficent effect; but there was the important element of the improved condition of the working classes themselves. Trade unionism, by raising wages, comfort, and self-respect, and the marvellous growth of friendly societies, had co-operated in raising the standard of comfort and general well-being. What more was to be done? Was the hustle doctrine to be adopted? In the interests of humanity, public opinion would not stand this. Whatever steps were recommended should be such as would have a fair chance of getting through the Town Council, and, if legislation were required, through Parliament.

Dr. Watson did not think notification would do much good. He wanted all buildings to be under better supervision. He

thought too much importance was now put on the bacilli ; the open-air treatment would have been adopted earlier but for this.

Dr. Russell ventured to say that, unless notification was compulsory, it was needless to adopt it. What was wanted, he held, was better drainage of all towns, and regulation of the width of streets. He deprecated these one-room houses with no through ventilation and no sunshine.

Dr. Parker was in favour of compulsory notification. They wanted information about all forms of tuberculosis, and could thus secure an educative influence on the sufferers by literature. Besides, notification would ensure disinfection of houses. Flittings frequently followed death, and, if death was due to phthisis, the Sanitary Department could disinfect. Advanced cases should be treated in some home, as they spread the disease.

Dr. Findlay, in reply, said he could understand the attitude of *Dr. Chalmers*, *Dr. Knight*, and some of the other speakers to compulsory notification, in view of the fact that the mortality from phthisis was on the decline, and their want of alarm at its infectivity, but it had been proved to his satisfaction over and over again, particularly during the last quarter of a century in his parish practice in the central district of the city, that consumption was very seriously infectious. He had seen whole families, one member after another, succumb to the disease in one and two-room overcrowded insanitary houses ; and it was quite a common experience to see a husband die from phthisis a year or more after his wife had died from the same disease, and *vice versa*, the question of infection from the sputa in all such cases being the important factor of causation and not hereditary family tendency. He, therefore, disagreed with *Dr. Chalmers* and those speakers who thought that voluntary notification would give all that was desired. He held that notification, if it was to have its full value, must be thorough—compulsory ; that the medical man must have no excuse for not notifying nor the sanitary authority for not attending to it ; for that authority, excellent and all as it was, might be none the worse of a little compulsion also. The best service, indeed the only reliable and perfectly trustworthy service, to be got from medical men and sanitary authorities alike, would always be when their duties were specific and defined, and there was no escape from the exact performance of the same. It was impossible that the medical officer of

health could hear of all the cases from voluntary notification, especially the early and incipient ones. And even if he did, what practical purpose could he put his knowledge to? As a matter of fact, he could not put it to any very serious practical purpose, for he had no powers. He could not go to an incipient consumptive and tell him it was imperative that he be removed to a sanatorium for some few months if he wished to be restored as a wage-earner again, or to an advanced consumptive and inform him that he was a serious focus of infection and must be sent to an isolation hospital; and that for the very good reason that he has neither sanatorium nor isolation hospitals to send them to, nor no powers to compel them to go, in their own, their families', and the public interest. It was this compulsory removal and detention which was the cause of the whole question, because their adoption would necessarily include a municipalisation scheme, with ample provision for the care and treatment of all at the public expense, just as other infectious diseases are cared for and treated at the public expense.

Dr. Findlay was glad, he said, to learn, on the authority of Councillor W. F. Anderson, that the municipality was bestirring itself to the extent that its Health Committee had taken steps to appoint an assistant to Dr. Chalmers to follow up voluntarily notified phthisical cases. It was a distinct acknowledgment on the municipality's part of its obligation and responsibility in the matter, which was a great step gained. As the municipality and the public became more enlightened, this provision was bound to be extended; and it might be predicted with confidence that some wise form of compulsion would by and by be added if the thing was to be worth the candle. Though most of the speakers fought shy of this logical conclusion, Drs. Dunlop, Carswell, Steven, and others seemed to understand the difficulty, viz., that without some compulsory control this new move of the municipality would be comparatively worthless. Dr. T. K. Monro was also shrewd enough to see that compulsory control was the necessary corollary of compulsory notification, with the provision of sanatoria and isolation hospitals, which, he fears, would be too great a cost to the public. Dr. Granger, also, while thoroughly alive to the infectivity of phthisis, was doubtful if we were entitled to ask the city or the Government to erect sanatoria all over the country for the treatment and isolation of the consumptive poor. As a matter of fact, however, Dr. Findlay submitted that local authorities and parish councils everywhere were moving in this very direction. The

Glasgow Parish Council had already founded sanatoria for pauper lunatic consumptives, the majority of whom would be better in their graves, but, unfortunately, had left as yet unfounded sanatoria for the ordinary pauper consumptives, for whom there is a chance of cure and restoration to their families as breadwinners again. The municipality, moreover, undertook schemes with a light heart which were far more gigantic and costly, and for much less important and beneficent ends. There was no reason why sanatoria might not be built and even administered with economy. Besides, if the public were paying for such in municipal rates, they would not be doing so in poor rates, as at present. Neither was Dr. Findlay appalled, as Dr. Chalmers seemed to be, at the prospect of having to provide open-air occupations for the cured, or partially cured, consumptives on their return from sanatoria to a city like Glasgow again. Such a difficulty might also, to a considerable extent, be met by an earnest and enlightened municipality bent on conserving the lives of its wage-earners. But, he asked, was it absolutely necessary to find such occupations for all restored consumptives? He had lately seen a group of consumptives who had vomitæ in their lungs, and who had undergone sanatorium treatment for from six to twelve months, and were all back again at their former occupations of clerks, warehousemen, and domestic servants, for two, three, and four years without any return of their symptoms.

As to the point raised by Dr. Couper, Dr. Steven, and others, of the propriety of including other tuberculous diseases in a notification scheme, he would remark that he would be quite content to deal with phthisis pulmonalis in the meantime, as the other forms, inasmuch as they require surgical interference, are already amply provided for in general hospitals; and it is the almost scandalous want of such provision for the ordinary poor consumptive which has raised the clamancy of the whole question, and is, indeed, the breed-bate of the present discussion.

With the views expressed by Dr. Allan, Dr. Findlay said he was in entire sympathy, their differences of opinion being about the ways and means of carrying them out. Dr. Allan does not think we are ripe for compulsory notification, yet, in pressing his claims for the advanced consumptives, is of opinion that provision should be made by the Town Council; but Dr. Findlay could not see how that body could successfully take the subject up without also adopting a compulsory notification act.

Voluntary notification is also favoured by our poor-law expert (Mr. Jas. R. Motion), but not very consistently, Dr. Findlay thought, since the Glasgow Parish Council has at present a Bill before Parliament—"Detention of Poor Persons (Scotland) Bill," dealing with those known as the "ins and outs"—in which there is a clause providing for the compulsory removal of cases of disease to the poorhouse or hospital, which, on account of improper lodging or insufficient accommodation, cannot be properly treated where they are; and, if this Bill in its entirety passes into law, it will necessarily compulsorily remove a great many consumptives, especially of the advanced type.

As regards the doctrine put forward by Dr. M'Lean—that phthisis is a chastisement of Heaven upon mankind for their forsaking the country, where fresh air and sunlight abound, and becoming dwellers in cities, and that the solution of the problem lies neither in notification nor sanatoria, but in returning to the country and to nature—Dr. Findlay said he had no objection to such a philosophy of sane and desirable living, but he was afraid, however impracticable or utopian his own scheme might be, Dr. M'Lean's was infinitely more so. To wait for the realisation of such an ideal as he suggested would, he said, be something like waiting for the millennium. Meantime, the case was pressing, and something must be done with such conditions and surroundings as we have. It was, indeed, Dr. Findlay said, our utter helplessness in having no provision, such as we have in the case of the rich, for the honest, decent, hard-working, poor consumptives, whereby they may be cured and restored as wage-earners to their families again, instead of being allowed to struggle and drift on until they become hopeless wrecks, that induced him to bring the subject before the Society in its present form, in the hope that some practical solution of so distressing and urgent a problem might be arrived at.

DR. FINDLAY then moved—"That this Society recommends the Corporation to put pulmonary phthisis in the Infectious Diseases Notification Act." DR. BUCHANAN seconded.

DR. COUPER moved—"That the Society sees no reason at present for the compulsory notification of phthisis until it receives more light on the subject." DR. WILLIAM ANDERSON seconded.

On a division, the motion was carried by 13 votes against 10 for the amendment.

REVIEWS.

Report on the Causes and Continuance of Plague in Hong Kong, and Suggestions as to Remedial Measures. By W. J. SIMPSON, M.D., F.R.C.P. London: Waterlow & Sons, Limited. 1903.

THIS able and instructive *Report*, coming as it does from a recognised authority on epidemiology, cannot fail to be interesting and useful to all who are concerned in the great problem of plague prevention.

The good work done in cholera and plague by Dr. Simpson, formerly Health Officer of Calcutta, and now Professor of Hygiene in King's College, London, is well known and highly valued. After taking up his residence in London, he was sent out as an expert to give his assistance in the outbreak of plague at the Cape, and subsequently he received a commission "to visit the colony of Hong Kong to investigate and report upon the causes and continuance of bubonic plague therein, and to advise remedial measures."

The results of the latter mission are embodied in this *Report*, which is addressed to the Secretary of State for the Colonies.

It is divided into four parts, the first dealing with plague in China (a) before the outbreak in Canton in the spring of 1894, and (b) during and after that event; the second with plague in Hong Kong; the third with the results of investigation into plague in animals; and the fourth with suggestions for remedial measures.

Dr. Simpson shows that Southern China has been infected for years with plague, and that Hong Kong—situated near the mouth of the Pearl River—got its infection from Canton, which is less than eighty miles up the river. There is an enormous traffic of men and goods between Canton and Hong Kong, and thus there is ample opportunity of re-infection even if Hong Kong were freed from the plague. But in point of fact plague is now endemic in Hong Kong.

He is of opinion that "This endemicity owes its maintenance to—

"(a) Infection among rats, probably often connected with infectious material in rat runs or in houses, the virus of which has not been destroyed.

"(b) Retention of infection in houses which are rat-ridden, or which have escaped disinfection because of the plague patient who occupied the house having been taken to China, or dumped when dead or dying into the street, or which could not be efficiently disinfected because of the darkness and insanitary condition of the infected house.

"(c) Infected clothing of people who have been ill or who have died of plague, and whose effects have been removed to some other house without disinfection.

"On the other hand, the recurrent outbreaks of epidemic prevalence are favoured by—

"(a) The seasonal heat and moisture of the spring and early summer.

"(b) The movement from place to place of infected rats and persons.

"(c) The general insanitary condition of the interior of a great number of the Chinese tenement houses, the rooms of which are dark, damp, badly ventilated, and grossly overcrowded.

"(d) The high proportion of the population, which is poor, living in tenement houses, and whose habits, dwellings, persons, and mode of preparation and storage of food are not at all cleanly; who at the same time are not permanent residents, and whose susceptibilities to endemic diseases are accordingly greater than those of a more residential population. New-comers are specially prone to plague when freshly exposed to infection in insanitary houses."

One is tempted to deal with this *Report* in detail, but space forbids.

Only a few more extracts can be given.

As regards the investigations in animals—"The experiments undertaken demonstrate that pigs, calves, buffaloes, sheep, hens, ducks, geese, turkeys, and pigeons are, in addition to rats, susceptible to plague, and particularly so when fed with plague material. The Chinese have generally maintained that these animals and birds suffer from plague, and evidently their observation, as in many other instances, is correct, though their theories as to causation need not be considered."

Clinical reports and temperature charts, of the cases of animals experimented on, are given.

Dr. Simpson is of opinion that more attention must be paid to food supplies during plague epidemics. This is a very important point:—

"A fact to be noted is, that after the infection enters the body by the alimentary canal, a considerable period sometimes

elapses before the animals show any marked signs of illness." . . . This long period . . . "is important in relation to the interval which elapses between cases of plague in endemic centres."

As to remedies, he says:—"The remedial measures, as regards external causes, consist in controlling, as far as possible, the avenues by which the infection is introduced into the colony. For this control it is necessary for the Government to be regularly informed as to where plague exists, but even with this information it has to be recognised that, with the southern coast of China in the condition described, Hong Kong is continually subjected to the risk of re-infection, and that no amount of precaution which is within the bounds of practicability can do more than lessen that risk so long as China takes no action.

"In regard to internal causes the remedies lie in the creation of a special plague organisation to combat plague, and the centralisation of all sanitary matters into a Public Health Department, with a trained medical man, skilled in sanitary matters, as its administrative chief, who shall be *ex-officio* President of the Sanitary Board, and who shall be responsible to the Government for the efficient administration of the department."

This *Report*, by Professor Simpson, is well worthy of the careful attention of health officers and sanitarians.

Annual Report of the Medical Officer of Health for the City of Bristol, 1901. Bristol: Bennett Brothers. 1902.

DR. DAVIES shows a keen appreciation of the relative importance of the various points discussed, and the style of the report as a whole is excellent.

Memoirs and Letters of Sir James Paget. Edited by STEPHEN PAGET, one of his Sons. With a Portrait. Third Edition (eighth impression). With a Postscript by SIR THOMAS SMITH. London: Longmans, Green & Co. 1903.

It is gratifying to find that there has been such a remarkable demand for this excellent book, the first edition of which was noticed in these columns in February of last year. The present edition contains nearly thirty pages more than the first.

The new matter includes further notes by the editor, a post-script by Sir James Paget's friend of more than half a century, Sir Thomas Smith, and a list of Paget's principal writings. We heartily commend the volume to all our readers.

Diet and Food in Relation to Strength and Power of Endurance. By ALEX. HAIG, M.D. Fourth Edition. London: J. & A. Churchill. 1902.

It is difficult to conceive for whom this book has been written. If it is intended for the general public, any result it may have can be only and entirely pernicious; if intended to appeal to the members of the medical profession, it will hardly be taken seriously by them. The repeated references to another and companion work by the same author is self-advertisement of a most flagrant form. Briefly, the author endeavours to show that vegetarianism is the correct line to take in selecting foods; not only so, but he would also exclude from our diet eggs, the pulses, asparagus, tea, coffee, and cocoa. Dr. Haig might just about as well attempt to persuade us to walk on our hands instead of our feet, and with about equal reason. The book is not worth detailed criticism, but at the same time is well worth spending half an hour or so over when a little light mental relaxation is desiderated.

Suggested Standards of Purity for Foods and Drugs. By C. G. MOOR, F.I.C. London: Baillière, Tindall & Cox. 1902.

THIS work will be of considerable value to pharmacists, public analysts, and others who, for any reason, require to examine analytically the various substances employed in pharmacy, and also the ordinary food stuffs. To a more limited extent the work will be of service to the country practitioner, who is impelled occasionally to enquire into the quality of the drugs supplied to him. As the "standards" are only suggested, they have not full legal value, but as they are the result of very careful and repeated examination of the substances they have full moral value, and serve as efficient guides in deciding the question of average composition of genuine samples. The sections dealing with bread, butter, carbolic powder, coffee, condensed milk, milk, and cream, are of particular value. The

author's conclusions with regard to ice creams and ices will, however, not commend themselves to those who are responsible for the administration of the Sale of Food and Drugs Acts. A judicious elaboration of the work in the next edition will considerably enhance its value.

The Treatment of Injuries by Friction and Movement. By WHARTON P. HOOD, M.D. London: Macmillan & Co., Limited. 1902.

THIS little volume of 182 pages is full of interest. Founded on an experience of twenty-five years, it commands attention. The author had his attention first drawn to the subject by watching the practice of the late Mr. Hutton, a well-known "bone-setter," who died in 1871. He tells us that "Mr. Hutton was seldom consulted about cases of recent injury; and, when he was, his management of them differed in no important respect from that which was common among the surgeons who were his contemporaries. He ordered 'rest,' used ice, and applied evaporating lotions, with the not uncommon result that, in the end, adhesions were formed, and that he had to break these by 'bone-setting' in his accustomed manner" (pp. 12, 13). Hutton's practice with regard to cases of old standing Dr. Hood applied to recent injuries. Briefly, the author considers that "all injuries which are not attended by any external wound communicating with them, may be safely treated by rubbing, strapping, and immediate and persistent use of the part, to be followed by exercises of a definite character" for any muscle partially disabled by rest (pp. 14, 15). The principle underlying the treatment advocated is that of *prevention* of stiffness and disability by keeping the circulation and the nutrition unimpaired. Details of the application of this principle to individual fractures, dislocations, sprains and lacerations of muscles, are gone into, and the book closes with a description of muscular exercise by means of weight and pulley.

We cannot agree with the author as to the effect on muscles (p. 89) of the continuous extension by weight and pulley, nor with his opinions as to the desirability of fibrous union of a fractured patella. There is an apparent disregard of securing that in a fracture, the fragments should be in good position. Despite criticism of the above points, we can sincerely recommend the work to the consideration of the profession.

Clinical Lectures on Stricture of the Urethra and Hypertrophy of the Prostate. Second Edition. By P. J. FREYER, M.A., M.D., M.Ch. London: Baillière, Tindall & Cox. 1902.

THE first edition of this little work was rapidly disposed of in a few months. The *raison d'être* of a second edition is the seventh lecture, which contains an account of the author's operation for radical cure of enlarged prostate by "total extirpation of the prostate in its capsule." This lecture is an epitome of two lectures published in the *British Medical Journal* in July, 1901, and February, 1902, which may be remembered for the long-continued controversy in the *Journal* between the author and many surgeons, who disputed both the accuracy of his anatomical description of the prostate and his claim for the originality of the operation. A record of eleven successful cases of total extirpation of the prostate by the suprapubic route is one that no other method of dealing with enlarged prostate can approach, especially in view of the permanency of the cure effected, and in view of the fact that all of these cases were far advanced, the patients were broken in health, and catheter life had become intolerable. The operation has this advantage, that the enucleation of the encapsuled prostate is done by the finger only, after the vesical mucous membrane has been incised or snipped with scissors. We are surprised to read with what rapidity the suprapubic wound closes, in most of the cases a month being sufficient. We think the author deserves congratulations for bringing the operation and its results in his hands before the notice of surgeons.

The book is pre-eminently a practical one, and is written in easy, and graceful, and withal convincing style.

The Diagnosis of Surgical Diseases. By Dr. E. ALBERT. Authorized Translation, from the Eighth Enlarged and Revised Edition, by ROBERT T. FRANK, A.M., M.D. London: Henry Kimpton. 1902.

IN the translator's preface we are told that "this volume presents to the practitioner and to the student the problems in diagnosis which confront them at the bedside, . . . diseases are grouped according to similarity of symptoms and points of general resemblance. . . . The fragmentary and disjointed instruction which clinical demonstration necessarily entails, even under the most favourable condition, is thus systematized."

We have gone into the subject-matter carefully, and we rise from our reading with the feeling that this book will prove invaluable to everyone who cares to make use of it. The various regions of the body are passed under review, and the points of differential diagnosis of their various diseases and injuries are gone into. Here and there illustrative cases are reported, with the confirmation, or the reverse, obtained on the operating and occasionally, also, on the *post-mortem* table. There are a few figures designed to illustrate the text. These are mostly from drawings, and therefore lack the accuracy of photographs. One would hardly imagine that he is reading a translation, so well has Dr. Frank performed his work.

One feature in Professor Albert's work is his references to old writers. This is regrettably unusual in most writings of the present day, whose authors seem to forget that even Agamemnon had predecessors.

We find on the title-page that the translation is of the eighth edition; this proves the esteem in which the work is held in Vienna and elsewhere.

We do not wish to bestow faint praise, nor do we desire to give vent to fulsome flattery, and we conclude this notice by simply recommending the volume to medical students, practitioners, and surgeons, as one which will prove "a friend in need." We feel certain that this translation only requires to become known to be in wide demand, and we have no hesitation in predicting that it will prove a conspicuous success.

A Synopsis of Surgery. By R. F. TOBIN, F.R.C.S.I. Second Edition. London: J. & A. Churchill. 1902.

THE first edition of the *Synopsis* appeared in 1900. It was a republication of notes which the author had been in the habit of distributing amongst the members of his clinical class at St. Vincent's Hospital. It was not intended to be a text-book, but merely a pocket note-book, and was interleaved with blank pages for additions and illustrations by individual students.

In the edition now before us, some additions have been made, so as to make the work more complete, but it still remains as originally intended, only an outline of the subject. Not students alone, but practitioners also, will find it a useful work to keep by them, and the blank pages will enable the possessor of the volume to increase its value for himself by

the insertion of notes of cases actually observed. We feel sure that it will have a wide circulation.

Transactions of the American Surgical Association.
Vol. XIX. 1901.

THIS volume opens with the Presidential Address by Roswell Park on "Recent Investigations regarding the Nature of Cancer." This is an instructive review of the subject, pointing to the belief in the existence of protozoa as the cause of the disease. Coley contributes an interesting paper on the late results of his treatment of inoperable sarcoma; they are confirmatory of his original views; melanotic tumours and lymphosarcoma of neck are not much influenced, and a permanent result is not to be looked for in cases in which generalisation has occurred. There are several papers on the "blood-count" in relation to surgical diagnosis, ether anæsthesia, &c. In one of these Deaver warns the surgeon against being led away by the result of the blood-examination, and advises him to take into account all the features of the case. There are instructive papers by Mayo Robson on pancreatitis, and on chronic gastric ulcer. Papers follow on arterio-venous aneurism, hernia, aneurism, &c.

The volume contains a valuable collection of papers, which will be studied with advantage by surgeons.

Transactions of the Edinburgh Obstetrical Society. Vol. XXVI.
Edinburgh: Oliver & Boyd. 1901.

IN this volume Dr. Berry Hart returns once more to his theory regarding the separation of the placenta in the third stage of labour. He draws attention to the researches of Dawidoff regarding the presence of a well-developed network of elastic tissue in the body of the normal uterus, and suggests that the relaxation of the uterus after a pain is really an "elastic recoil." During the first and second stages, the uterine wall and placenta behave as one, and the placenta does not separate; but during the "elastic recoil" of the third stage the increase of the placental site is not followed up by the placenta, as the influence of the foetal heart has been cut off. The result is that the placenta partially

separates, and a repetition of the process completes the separation. Dr. Hart states, further, that a careful study of the Porro uterus has helped to establish his claim; for, though it is an over-retracted uterus, the diminution of the placental site does not separate the placenta.

A new method of treatment for the immediate relief of spoon-shaped indentations in the skulls of the new-born, forms the subject of a valuable paper by Dr. Munro Kerr. What he advocates is the firm compression of the head antero-posteriorly, or, on occasions, obliquely. The treatment has the merit of being simple, and, at the same time, rational.

Dr. Ballantyne draws attention to the value of "Cleidotomy" in cases where great difficulty is experienced in delivery of the trunk during parturition.

Most of the contributions to this volume are of a similar practical nature, and will help to sustain the high reputation of the Edinburgh Obstetrical Society.

Die Berufskrankheiten des Ohres und der Oberen Luftwege.

Von Dr. med. FRIEDRICH RÖPKE. Wiesbaden: Verlag von J. F. Bergmann. 1902.

IN this work Dr. Röpke gives the results of his investigations as to the rôle played by occupations and trades in the production of diseases of the ears and upper air-passages.

The deleterious effects of certain trades on the general health have long ago been very fully recognised, and where this has been proved, the well-being of the worker has in this country been safeguarded by Act of Parliament.

In this book will be found, in considerable detail, the results of a very careful study of the affections of the ear, throat, and nose to which workers are exposed in mining, in chemical industries, in metallurgy, in working with precious and other stones, in building, in carpentry, in printing, in the manufacture of colours, of explosives, of matches, of oils, glycerin, and paraffins, in textile industries, in paper making, in dress making, in laundry work, and in the preparation of foodstuffs. And the risks run by the agriculturist, the soldier, and the sportsman are not forgotten.

The investigations in connection with the various industries were made personally by the author, who, where possible, interviewed the workers themselves.

The book is well arranged, and has an ample index, and

should be of considerable interest to medical officers of health in manufacturing centres, as well as those who devote special attention to diseases of the ear and upper respiratory tract.

Die Taubstummheit auf Grund ohrenärztlicher Beobachtungen. Eine Studie zur Gewinnung einer künftigen verlässigen Taubstummenstatistik für Aerzte und Taubstummenlehrer. Von DR. FRIEDRICH BEZOLD. Mit sechs Textabbildungen und einer Tafel. Wiesbaden: Verlag von J. F. Bergmann. 1902.

THIS book treats deaf-mutism as a whole, and chiefly statistically. The author begins with an analysis of the occurrence of all diseases of the ear during his experience from 1872 to 1896, finding that the outer ear was affected in 23 per cent, the middle ear in 65·5 per cent, and the internal ear in 11·4 per cent.

The relative frequency of congenital and acquired deafness in deaf-mutes is then discussed. In 456 cases 43 per cent were born deaf, 51·1 born hearing, and the state of 5·9 per cent was at birth doubtful.

Two short chapters are devoted to the ages at which the examination of the 456 deaf-mutes took place, and the ages at which the diseases occurred which caused the deafness in the acquired cases.

According to sex, the cases were divided into 60 per cent of males and 40 per cent females, and the percentages are about the same in congenital and acquired cases.

The influence of heredity is next dealt with, and under this heading the consanguinity of the parents, the drinking habits in the parents, and the influence of difficult delivery in the production of congenital deafness are discussed.

A short chapter is then given on the association of idiotism, cretinism, and other anomalies, with deafness.

The most interesting chapter in the book is that which deals with acquired deaf-mutism. Meningitis accounts for about 52 per cent, scarlet fever for 18 per cent, measles for 2 per cent, syphilis for 5·6 per cent, otorrhœa for 6 per cent, blows for 3 per cent, and other causes in lesser degree.

These percentages are graphically shown by an illustration at the end of the volume.

The conditions found on examination of the ear in these acquired cases are then discussed.

An important chapter is then given to the testing of the hearing in the entire set of 456 cases. Bezold discovered islands of hearing in many of his cases, a sea or ocean of deafness surrounding the islands, the situation of these islands determining the value of the remaining hearing for teaching purposes.

The last chapter is devoted to treatment, but the author has no new suggestions here.

The book is a valuable contribution to the study of deaf-mutism, and an important addition to the continental statistics already collected by Hartmann, Mygind, and other authors, but no reference is made to British or American statistics, and when it is remembered that the American statistics of Mr. Fay are not only the most extensive, but by far the most carefully arranged that exist, the value of the book to any reader, but especially to the English reader, is lessened.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

A Case of Banti's Disease. By Dr. J. Mitchell Clarke (*Bristol Med.-Chir. Journ.*, March, 1903).—Banti's disease may be described as a profound anæmia with enlargement of the spleen and secondary cirrhosis of the liver with ascites; it is, indeed, a variety of splenic anæmia, and probably just a later stage of that disease.

The patient was a servant girl, aged 19. She had lived in the country all her life, and came of a healthy family. Four years previously she noticed an increase in the size of the abdomen, and this, on examination, was found to be due to enlargement of the spleen. Since then she had suffered from weakness and anæmia, and once had a severe bleeding from the nose. There was no history whatever of alcoholism. A few days before admission to hospital she vomited a large quantity of dark blood, but there had never been any symptoms of dyspepsia, and nothing to make one think of gastric ulcer.

On admission (24th February, 1902) the red corpuscles numbered 1,170,000 and the white 4,743; the hæmoglobin was 12 per cent. There was a marked poikilocytosis, and a moderate increase in the number of large and small lymphocytes. The lungs at this time were healthy. The left ventricle of the heart was somewhat dilated, and a systolic murmur was to be heard in the mitral area. Some free fluid was present in the abdominal cavity. The liver seemed little enlarged, and its lower edge could not be made out on palpation. The spleen was enormously enlarged, reaching below almost to the iliac crest, and forwards to an inch to the right of the umbilicus. The urine contained a trace of albumen, but no casts could be found.

The subsequent history of the case calls for little note. The cardiac area increased in extent till it extended from the left anterior axillary fold to two inches to the right of the sternum. The ascites increased, and there was marked œdema of the feet and legs. The liver could ultimately be felt below the costal margin, and the spleen reached almost to the pubes. On 4th April 8 pints of a blood-stained fluid were withdrawn from abdominal cavity, and again, on 26th April, 11 pints. On 14th April the red cells were 1,900,000, the white 3,500, and the hæmoglobin 22 per cent. Of the white corpuscles, 56 per cent were polymorphonuclear, and 43·5 per cent lymphocytes and transitional cells; only one myelocyte was found. On 10th May the patient vomited 5 pints of blood, and died a few hours afterwards.

At the *post-mortem* the spleen was found to weigh 3 lb. 13 oz. Its capsule was slightly thickened, and there was a large pale infarction. Microscopically, the trabeculæ and connective tissue showed a general increase, and the vessels everywhere were congested. The vessels of the pulp showed proliferation of the lining endothelium, but there was no evidence of proliferation in the endothelium of the sinuses. The malpighian bodies were few in number. The liver weighed 3 lb. 7 oz., and in the portal canals there was a slight excess of a fine fibrillar connective tissue. This was more marked in certain parts than in others, and, where most marked, it was encroaching on the liver lobules. The marrow of the tibia was dark red in colour, but it does not seem to have been examined microscopically. The heart weighed 13 oz.; both ventricles were dilated, but the valve segments were normal. There was no fatty degeneration of heart wall or of papillary muscles. The other organs were practically normal, except that at the lower end of the œsophagus the veins were varicose. The stomach, too, was full of blood-clot, the bleeding having come from a small eroded surface among the varicose veins at the cardiac orifice. There was no sign whatever of gastric ulcer.

As to the real nature of Banti's disease, Dr. Clarke thinks it impossible at present to come to any satisfactory conclusion. He mentions two theories as to its origin. The first considers enlargement of the spleen as the primary lesion, the other symptoms being secondary. The second theory explains the disease as due to vasomotor paresis of the splanchnic area, with engorgement of the abdominal viscera, especially the liver and spleen, the increased blood-supply to these organs eventually leading to fibrosis and lessened function.

A Case of Progressive Muscular Atrophy occurring in a Man who had Acute Poliomyelitis in Infancy. By Dr. Charles S. Potts (*Univ. of Penn. Med. Bull.*, March, 1903).—The patient, a man, aged 22, was a cigar-maker by occupation. When 7 months old he had an illness attended with convulsions, which left him paralysed in the right leg, and partially so in the left leg and right arm. Until three years ago the left arm was quite normal, but during these three years it had been getting gradually weaker, till he could no longer make use of it in his daily occupation.

On examination of the left arm, the atrophy was most apparent in the thenar and interossei muscles, but fibrillary tremors were well marked in most of the muscles of both the right as well as left arms. The right leg was typical of infantile paralysis. It was quite useless and 2 inches shorter than the left. In the left leg the movements were fairly good, excepting dorsal flexion of the foot and toes.

Dr. Potts gives, in abstract, 37 other cases of progressive muscular atrophy following infantile paralysis, but these are all the cases he can find after an extensive search through medical literature.

Case of Cheyne-Stokes' Respiration of Five Months' Duration. By Dr. Terrien (*Le Progrès Médical*, 21st March, 1903).—The patient was an old man, 77 years of age. Till five years ago he had enjoyed excellent health; then he began to suffer from pain in the chest and shortness of breath, especially on going up hill. The pain would be slight at first, but this would

be followed by paroxysms of great intensity. There was no valvular lesion of the heart to be made out, and the diagnosis was angina pectoris, probably associated with atheroma of the coronary arteries. At the end of four months the patient got much better, and was able to go about again. Then paralysis agitans developed, and the case presented all the features typical of that disease. But the patient remained fairly well till six months ago, when attacks of dyspnoea set in again. These were not angina-like attacks, but rather intermittent attacks of dyspnoea. They would last about one minute, and come on at intervals of a quarter to one hour. Soon this dyspnoea took on the definite Cheyne-Stokes' character, there being a pause of twenty seconds and a dyspnoea phase of from fifty to fifty-five seconds. This state of matters lasted for twenty-five days; then the dyspnoea gradually disappeared, and then the pause was no longer to be made out, the patient seeming quite well and remaining so for some months. But the Cheyne-Stokes' respiration came on again, and lasted right up till the time of death. Towards the end the pause had a duration of sixty seconds and the dyspnoea forty-five to fifty seconds. The patient died from progressive weakness, with gradual congestion of both lungs.

SURGERY.

By ARCH. YOUNG, M.B., C.M., B.Sc.

Cystic Tumours of the Mesentery.—In the *Medical Chronicle* (September, 1902), Mr. B. G. A. Moynihan, of Leeds, contributes a paper dealing with the pathology, diagnosis, and treatment of "Tumours of the Mesentery." These he divides into two classes—cystic and solid. The following note refers only to the cystic tumours:—

Cysts of mesentery he subdivides as follows:—

1. Dermoid.
2. Chylous.
3. Sanguineous.
4. Serous.
5. Hydatid.
6. Cysts of adjoining organs, encroaching on the mesentery.
7. Cysts with walls structurally resembling intestine.
8. Malignant cysts.

1. A number of examples of *mesenteric dermoids* are detailed by Moynihan. As to their origin, the old view was that all sprang from the ovary and were only secondarily mesenteric—a view that was based largely upon their clinical symptoms having something in common with ovarian tumours, and the similarity in their fluid contents (particularly the presence of pseudomucin) to that of ovarian cysts. Langton's case, in which a dermoid was found in each ovary and one in mesentery, finally disposed of this belief. Fœtal remnants of Müllerian and Wolffian apparatus known to exist in the mesentery suggest a more likely origin. Lexer's view is that these cysts are due to "ectodermic rests from the Wolffian duct."

2. *Chylous cysts* are, in Moynihan's view, "the most common of mesenteric cysts, and are of all sizes, from a local dilatation of a lacteal, upwards." "They arise in two ways—either they are primarily dilated and varicose lymphatic vessels, which, gradually enlarging, form cysts, or they are primarily serous cysts, the lacteals bursting into the cyst on account of stretching and thinning of their coats." "The latter is probably the more common."

3. "*Sanguineous cysts* are almost always traumatic." "A large hæmorrhage may develop into a cyst, or there may be hæmorrhage either into a pre-existing cyst or into a tumour of the mesentery, and the greater part of the

blood corpuscles may vanish, and cysts which have been described as serous cysts remain, or, finally, the fluid constituents of the blood may be absorbed and a more or less solid tumour be left." "A hæmorrhage into the mesentery may then result in—(a) a pure blood-cyst; (b) a sero-sanguineous cyst—serous cyst; (c) a hæmorrhage into the pre-existing cyst; (d) a hæmorrhage into a mesenteric growth; (e) a solid tumour." Examples of each class are quoted.

4. "*Serous cysts* may be simple or multilocular." The fluid in all is pale straw-coloured; specific gravity, 1015 or 1016; contains much albumen, and is alkaline in reaction. Even these cysts are, by several observers, regarded as probably of embryonic origin. They present, at anyrate, close resemblances to serous cysts of ovary and parovarium.

5. *Hydatid cysts*.—Nanotti's article, in which records of twenty-nine cases are given, is quoted. "In some cases, a diagnosis of *barren hydatid cyst* has been made from the character of the fluid (pale, clear, limpid; specific gravity, 1010; no albumen, and abundant chlorides)." Certain of these ought probably, according to Dowd, to be regarded as embryonic cysts which contained pseudomucin.

6. "*Cysts of adjoining organs* may insinuate themselves between the layers of mesentery and simulate true mesenteric cysts." Such are cysts of pancreas, ovary, and, in Moynihan's own case, "a cyst of the lower pole of the right kidney."

7. *Cysts with walls structurally resembling intestine*.—Studgaard's case of a cyst containing 200 c.c. of chocolate-coloured fluid, with a funnel-shaped process, thick as one's thumb, that "had to be cut in removing the cyst," is quoted at some length. The wall of the cyst was partly smooth and shiny, partly like mucous membrane. Section of the smooth area showed a connective tissue layer containing pigment and epithelial cells, irregular in formation and arrangement, and, of the mucous membrane-like portion, structures like intestinal wall, with more irregularity of arrangement of the tubular glands than usual in the latter, degeneration of the superficial layer, and absence of Peyer's patches and solitary glands. Eve's case had, in the cyst wall, three layers of unstriped muscle. Other cases are referred to, and the explanation is put forward that they are all probably due to sequestration or diverticulum from the intestine.

8. *Cystic malignant disease*.—The reference to these is merely the statement that Thornton has recorded one example, and Keen has recorded a cystic sarcoma of omentum.

Moynihan's conclusion as to the pathology of mesenteric cysts is that "the more closely cysts of the mesentery are studied the more likely does it become that, with the exception of parasitic and malignant cysts, all the forms are embryonic in origin, and are due to 'rests' derived from the Müllerian and Wolffian organs or ducts, or from the ovary." A careful examination of the cyst wall and of the fluid should, in all cases, be made.

As regards the diagnosis of cystic disease of the mesentery, it is noted that women are much more subject to it than men, the only form occurring in both sexes with perhaps equal frequency being the hæmorrhagic cyst. Dermoid cysts are said to have been found only in women. Age seems to be of little importance, the extremes of life being by no means exempt.

The tumours vary much in bulk; they may be extremely large, or may be insignificant.

The shape is usually round; the outline even, or perhaps lobed. Its greatest prominence is generally near and slightly to the right of the umbilicus, approaching it as the cyst enlarges. "The umbilicus never becomes protruded."

There is great mobility of the tumour, especially in the transverse direction, also the possibility of rotation round a central axis. Fluctuation is present and sometimes easily felt, but may be confounded with elasticity of a lipoma of omentum or mesentery.

"Hydatid thrill" may be made out in hydatid cysts of mesentery (*vide case* quoted by Meissner).

Percussion gives a zone of complete resonance all round, and a band or belt of resonance (on light percussion) across the cyst.

The "three diagnostic signs of Tillaux" are (1) resonance below; (2) resonance above; (3) transverse resonance of a band.

Exploratory puncture, in Moynihan's opinion, is dangerous, on account of leakage from the cyst, and possibly hæmorrhage from any large vessel ramifying on the wall.

As regards the differential diagnosis, Moynihan says:—"A fluctuating tumour of the abdomen which lies at first laterally, but which, enlarging, tends to occupy the middle of the abdomen, which, pointing towards the umbilicus, is freely movable, especially in the transverse direction, capable of rotation on its own axis, surrounded by a zone resonant on percussion and crossed by a belt of resonance, can be no other than a mesenteric cyst."

As to treatment, "enucleation is the ideal procedure, and should be adopted in most cases."

Tendon-Transplantation in Cases of Infantile Paralysis of the Lower Extremity.—W. P. Montgomery gives, in a short paper in the November issue of the *Medical Chronicle*, the conclusions he has formulated on the results obtained by him in a series of twenty-five cases. Shortly, the classical methods are four in number:—

1. Division of the tendon of a healthy muscle, and its implantation into the tendon of a paralysed one.

2. Division of the tendon of paralysed muscle and its attachment to an acting undivided muscle (the "passive" method of Hoffa).

3. Transference of a slip from an active muscle-tendon to a paralysed one (the "active" method of Hoffa).

4. Attachment of an active muscle-tendon, or of a slip from it, to the periosteum at a new site.

Montgomery has practised each of these methods in particular cases, and in some cases has used a combination. His cases he divides into five groups:—

"(a) Those in which a slip from the tendo Achillis was used as a graft to other muscles; to extensor communis, two cases; to the peronei, three cases; to the tibialis posticus, three cases; to the tibialis anticus, one case."

"(b) Those in which the acting extensor longus hallucis was divided and transplanted to the tibialis posticus, one case; to the extensor communis, two cases; to the tibialis anticus, two cases."

He points out that, generally speaking, it is risky to sacrifice a healthy acting muscle, but that as the great toe has a subsidiary extensor in a slip from the extensor brevis digitorum, the long extensor may safely be made an exception to the rule.

"(c) A slip from the tibialis anticus was attached to the extensor communis, three cases; to the tibialis posticus, two cases; to the peroneus longus, one case."

"(d) Cases in which a slip from an acting muscle tendon was transferred to a new site on the periosteum. In two cases the tendo Achillis, and in two cases the tibialis anticus, was employed. In all, the slip was attached to the periosteum over the cuboid. These were cases of paralysis of the peroneal type."

"(e) Cases in which the transplantation was associated with the removal of some portion of bone in order to correct deformity." This group includes four cases in which partial or complete astraglectomy was performed.

In all the cases the paralysis was permanent, and had lasted over a year, and in most of the cases the deformity to be corrected was caused by paralysis of one or more of the dorsi-flexors of the ankle. Two cases were operated on over four years ago, but the majority have only been done from six to twelve months.

The following are Montgomery's conclusions:—

"(1) The progress of cases in which the gastrocnemius and soleus were adapted as dorsi-flexors of the ankle was very slow. Where the acting and

paralysed muscles were more nearly allied in their action, improvement was much more rapid and the earlier results much more satisfactory."

"(2) The greater the length of a tendon of a paralysed muscle to which the acting muscle was applied, the less satisfactory the earlier result, and the slower the improvement."

"There is no doubt that this factor of the stretching of the paralysed tendon or its muscle is the most important one. It was to obviate this that Lange suggested that the slip from the acting muscle should be fixed to the periosteum at a suitable site. In the four cases in which this method was used, improvement was certainly quicker and more definite."

"(3) The results of the 'passive' method were much inferior to those of the 'active' method. It is better, too, to divide the paralysed tendon and fix the graft to its cut end, rather than to merely button-hole and attach the slip to the tendon in its course. In the cases where this latter method was employed improvement was slow, from slackening of the paralysed muscle."

"(4) All deformity must be corrected at the time of the transplantation. In four cases this required excision of more or less of the astragalus, and they all did well. In several others, tenotomy, or tendon lengthening, or tendon shortening, was performed. This lengthening and shortening gives a much better result than simple tenotomy alone, especially in the case of the Achilles tendon in equinus and equino-varus."

"(5) The ideal method as regards after-treatment is to begin massage and passive movements after three weeks, and gentle active movements after four." In hospital patients this cannot be done, and with them Montgomery fixes the foot in plaster for five or six weeks, and then allows both active and passive exercises.

Montgomery is uncertain as to utility of faradism or galvanism in any of his cases. Where stretching of the tendon was anticipated, an artificial muscle was employed for the first few weeks to lessen the strain.

MATERIA MEDICA AND THERAPEUTICS.

By JOHN M. COWAN, M.D.

The Treatment of Hæmoptysis in Phthisis (*Bull. de la Soc. Méd. des Hôp.*, 1902, p. 975; 1903, p. 108).—Souques and Morel have been employing adrenalin in cases of severe hæmoptysis. They administered the drug hypodermically, in doses of 0.5 to 1 mgr. The hæmorrhage ceased in every case (four cases with nine bleedings) within six hours. The smaller dose seemed as efficacious as the larger, which, moreover, was sometimes followed by toxic symptoms (headache, giddiness, nausea, vomiting). The injection is painless and has no local effect.

In these cases the blood-pressure became slightly raised, but in other patients the effect varied. The pulse-rate was sometimes increased, sometimes unaltered, but most frequently slowed.

Bouchard has used intra-tracheal injections in hæmoptysis with success.

Vaquez has injected it into the substance of the lung with good results.

(Le Noir has found adrenalin useful as a local application to hæmorrhoids if strangulation is threatened. Mossé has also used it with advantage.)

Gelatin (*Lancet*, 1903, i, p. 578) has been recommended for some years past as a hæmostatic, but has never come into general use, as its effects when administered by the mouth are *nil*, and subcutaneous or intravenous injections are necessary. These are painful, and are often followed by irregular pyrexia lasting for a week or ten days, and infrequently by local sepsis.

Rectal injections seem as efficacious as subcutaneous ones, and have none of their disadvantages. Ticknell reports 20 cases in which the bleeding rapidly ceased under this treatment.

Collargol (*Bull. de la Soc. Méd. des Hôp.*, 1902, pp. 1088, 1119, 1121, 1122, 1151; 1903, p. 37; *La Presse Méd.*, 17th December, 1902).—Collargol, an allotropic form of silver, was introduced by Credé in 1897, and since then has been employed by veterinary surgeons and physicians in many of the infections. It is soluble in water, and may be administered by the mouth, by intravenous injections, or by inunction.

Netter has recently been using it, and has reported his results. In his first series of 10 cases (pericarditis, acute rheumatism, scarlatina, cerebro-spinal meningitis, diphtheria (2), enteric fever (3), tuberculosis), the course in 9 was rapid and satisfactory; in the tuberculous case considerable improvement ensued.

In his second series (pneumonia (9), enteric fever (9), broncho-pneumonia (14), scarlatina (4), diphtheria (37), endocarditis (2), puerperal infection), the results were most satisfactory. In two cases of advanced tuberculosis no improvement followed.

Moutard-Martin has treated two cases of pneumonia with collargol, and Rénon and Louste a case of enteric fever, with rapid recovery.

The mode of action of the drug is not clear, as its bactericidal powers are slight. Netter considers that the catalytic action analogous to that of ferments, which metals in a fine state of division possess, may be the potent factor. He himself uses inunction or intravenous injections, and is most enthusiastic over his results.

Cohn (*Centralbl. f. Bacter.*, 1902, xxxii, pp. 732, 804) has made extensive investigations on collargol in experimental infections. He states that within forty-five minutes after the injection the silver disappears from the blood, as it is almost at once precipitated in the tissues. The precipitate has no bactericidal action.

The Salicylates in Acute Rheumatism. Walsh (*Journ. Amer. Med. Assoc.*, 1903, i, p. 216).—Salicylates must be given in full doses, 90 to 120 grains per day, if any beneficial effect is to be expected. There are, however, several contra-indications. In some patients, especially young girls, delirium ensues, while in others gastric symptoms may result, and the digestive disturbance increases the tendency to anæmia. The derivatives of the salicylates are excreted by the kidneys and are distinctly irritant, and seem in some cases to cause nephritis. If nephritis is present, the salicylates should not be used.

"There is no doubt that the salicylates relieve the pain, lessen the fever, and diminish the restlessness, and so make the patient very comfortable. There is considerable doubt, however, as to whether the remedy affects the rheumatic process itself."

Cardiac complications are not less frequent under the salicylate treatment than they were before its introduction; they seem, in fact, to occur rather more often (Pribram). Hyperpyrexia, however, is much less commonly met with.

The salicylates are not specifics for rheumatism, and the cognate coal-tar products (antipyrin, phenacetin) may prove effective when the former fail. If the salicylates are going to do good, improvement will be noticed on the second or third day.

Von Leyden gives antipyrin in full doses to his rheumatic patients.

Macrae, in the same number of the *Journal*, reports the statistics of 270 cases of acute rheumatism treated in the Johns Hopkins Hospital. Alkalies and salicylates or oil of winter green were the drugs used. The average duration of fever after admission to hospital was, in these cases, slightly longer than that of Sir W. Gull's patients treated on the expectant plan (*Medical Papers*, New Sydenham Society, 1894, p. 513). The figures, however, cannot be accurately contrasted.

The Indications for Stimulation.—"The Results of some Observations on Blood-Pressure in Morbid Conditions in Adults." By John Bradford

Briggs, M.D. "The Clinical Value of Blood-Pressure Determinations as a Guide to Stimulation in Sick Children." By Henry Wiseman Cook, M.D. (*Bulletin of the Johns Hopkins Hospital*, February, 1903).—It is here urged that in all classes of cases, medical and surgical, a study of the blood-pressure is the most accurate guide to the use of the stimulant drugs. It was found that by routine determinations every one, two, or three hours, according to the severity of the case, variations in blood-pressure could be met and corrected by regulating the stimulants according to the indications of the blood-pressure chart, and that these duties could be safely entrusted to a nurse. It is contended that this method is much less likely to lead to either over- or under-stimulation than the usual periodic routine order. Both writers employed a modified Riva-Rocci sphygmomanometer. Their results indicate that digitaline hypodermically is the most rapid stimulant, the rise in blood-pressure usually beginning in from five to ten minutes, and lasting from one to two hours. Strychnine takes a little longer to influence the blood-pressure (up to twenty minutes in children); the elevation is not so great as after digitaline, but is of longer duration, persisting for from two to six hours. By giving these drugs at regular intervals a constant blood-pressure could be maintained.

Alcohol was not found by Briggs to contribute to the maintenance of the "stimulation level" of the blood-pressure curve, for though usually in temperate adults half to one ounce of whisky caused a temporary rise which lasted for under thirty minutes, a slight but more permanent fall below the previous level followed, and in some cases occurred without any preceding elevation. That any rise in blood-pressure is merely due to reflex irritation of the stomach (?) seems proved by the fact that 10 to 15 drops of tincture of capsicum, administered by the mouth, caused elevation in blood-pressure of equal or even slightly greater duration than that seen after giving from 4 to 6 drachms of whisky. Cook, on the other hand, while holding that "alcohol is unsatisfactory for immediacy, permanency, or reliability as a stimulant in single doses," declares that "in repeated doses it appears to have a marked and permanent beneficial effect."

Both authors are agreed that the subcutaneous infusions of normal saline solution are unsatisfactory for any true stimulant action, and in surgical and traumatic shock are absolutely contra-indicated, as in every such case the infusion by the ordinary method always produced a further fall in the blood-pressure, and aggravated a condition already sufficiently alarming.—J. W. F.

The Treatment of Diphtheritic Palsies.—A discussion on this subject is reported in the *Bulletin de la Soc. Méd. des Hôp.*, 1903, p. 12. The following is a brief résumé:—

M. Charles Aubertin, in the course of his paper, discussed fully the various clinical forms of diphtheritic paralysis. According to his experience, the early use of anti-diphtheritic serum in the acute stage of the disease greatly lessened the possibility of the occurrence of palsy, while an established paralysis was but little, if at all, influenced by serum-therapy. He concluded by saying that his clinical observations had borne out the experimental researches of MM. Philippe and Babonneix, inasmuch as the lesions appeared to be sometimes central and sometimes peripheral.

M. Comby stated that, in his experience, serum-therapy not only prevented in great measure the occurrence of diphtheritic palsies, but was of service in their treatment when established. In support of his statement, he quoted from M. Mongour (Bordeaux), M. Morqui (Monte Video), and M. Ginestous (Bordeaux). He cited, also, a case of his own where paresis of the palate had lasted for eight days, and disappeared two days after the injection of 20 c.c. of serum. He considered that serum should be given in all cases of diphtheritic palsy.

M. Barbier agreed with M. Comby that serum should be extensively employed in cases of palsy, especially on the ground that certain of the diphtheritic palsies did not appear suddenly, but were preceded by symptoms

which showed that, although the acute manifestations had subsided, there was still a more or less marked intoxication. He instanced such cases where convalescence was accompanied by cardiac disturbance, languor, &c. He stated that he had published observations on cases of this kind where slowing of the pulse and other toxic phenomena had disappeared after the injection of serum. He was of opinion that it was possible to foresee, as it were, the probable occurrence of palsy, and to prevent it by timely injections of serum.

M. Aubertin, in reply, quoted four cases where the palsy had not been influenced by serum-therapy, in two of which no serum had been given in the acute stage owing to faulty diagnosis. These two cases, he thought, were particularly interesting, as being eminently suitable for serum-therapy.

The question of the treatment of diphtheritic palsies by antitoxin is an interesting one, and it is difficult to define under what conditions serum-therapy may be useful. According to Ehrlich, antitoxin treatment is likely to be of service when the toxin is free, or only loosely combined with the nerve cells. Where the toxin is closely combined with nerve cells, it is extremely unlikely that any good will result from its employment. The two cases of "missed" diphtheria quoted by M. Aubertin are cases in point. No antitoxin had been given during the acute attack, and the toxins had opportunity to work unchecked until the patients came under observation with a thoroughly established palsy, and too late for one to expect antitoxin to be of any use. These two cases, then, so far from being, as M. Aubertin suggests, particularly suitable for serum-therapy, are just such cases as might be expected to be quite refractory to such treatment.

M. Barbier's attitude seems to be the correct one. Everybody is aware of the first signs of late mischief in diphtheria—irregularity of cardiac action (sometimes very slight), tachycardia of varying duration, slowing of the pulse, an undue persistence of the toxæmic facies, a slight drooping of one side of the palate, or a slight strabismus. If antitoxin is to be of any service, it must be given on the earliest appearance of such symptoms, however slight, and must not be withheld until a well-marked palsy has occurred. The value of such treatment can only be established by its employment over a long time in one of our fever hospitals, where some definite conclusion may be arrived at by comparison with previous statistics.

There seems little doubt that the proper administration of antitoxin during the acute stage of the disease has a powerful effect in the prevention and modification of diphtheritic palsies (Woolacott, *Reports, Med. Anyl. Bd.*, 1898). To be of any service, however, it must be given in large amounts (Cairns, *Lancet*, 1902, ii, p. 1685). The ordinary doses of 2,000 or 3,000 units, even if repeated, are of little value, not only in the prevention or modification of sequelæ, but even in the treatment of the acute attack, if it is at all severe.—J. C. M.

DISEASES OF THE SKIN.

By J. WYLLIE NICOL, M.B., C.M.

A Case of Acanthosis Nigricans. By Dr. B. Béron, Sophia (*Archiv. f. Dermatol. u. Syph.*, vol. lix, p. 3) —The patient, a farmer, aged 65, came under observation in September, 1901. The affection began ten years before, with redness of the skin on the inside of the thigh, followed by the appearance of small, itchy nodules. The condition remained unchanged till the spring of 1901, when he noticed that the skin of his neck had become darker. Soon after, the same darkening appeared on the breasts, armpits, and abdomen. The skin became rough, and warty formations appeared. Itching was intense, and the patient lost flesh greatly. On examination, the following features were noticed:—The skin was light brown, and on certain parts—neck, breasts,

axilla, and abdomen—quite black. The skin, as a whole, was rough from the prominence of the ridges, and in many parts from warty nodules. The hair on the head and body was thinned, and on many places had completely fallen out. The skin was dry and stiff; there were no scales, crusts, pustules, or abrasions. On the mucous membrane of the mouth and nose were irregular excrescences.

Microscopical examination showed in the epidermis a marked increase in all the layers, in the cutis a great lengthening of the papillæ, with slight small-celled infiltration. The pigment was increased in the epidermis, and to a less extent in the cutis.

Primary Actinomycosis of the Skin in the Occipital Region. By Dr. Ignaz Böhm (*Archiv. f. Dermatol. u. Syph.*, vol. lix, pt. 3).—Primary actinomycosis of the skin is rare. The patient was a butcher, aged 26. The disease commenced one year before he came under observation, as an inflammatory swelling on the back of the head. It was accompanied by pain and fever. Under local treatment the inflammatory condition subsided, leaving an oedematous swelling, in which, after a time, coarse nodules appeared. These gradually softened. The patient was unable to account for the condition. When first seen by Dr. Böhm, the skin over the whole occipital bone was reddened and infiltrated, and contained from 15 to 20 nodules, varying in size from a pea to a hazel nut. They were soft and fluctuant. Several had spontaneously opened and exuded a thickish, yellowish brown fluid. The bone was not affected; the glands were not enlarged. Nothing abnormal was detected in the mouth. From the presence of yellowish granules in the exudation the author diagnosed actinomycosis, and microscopic examination showed the fungus. The treatment consisted in opening the small abscesses, and injecting at intervals tincture of iodine. In two months the disease had disappeared, and, in the three years that have elapsed since, there has been no return. Infection probably took place through the patient scratching his head when preparing the flesh of an infected animal.

Epidermolysis Bullosa Hereditaria: Report of a Case Presenting Unusual Features. By Dr. G. W. Wende (*Journal of Cutaneous and Genito-Urinary Diseases*, December, 1902).—The chief points in this case, of a boy, aged 7, are:—The evidences of a hereditary or congenital tendency to the formation of vesicles and blebs at points subject to traumatism and irritation; the marked infiltration of the skin persisting after the lesions subside; the arrangement of the bullæ in concentric patches; the loss of the finger and toe nails; the lack of hirsute growth upon the scalp, and the absence of eyebrows and eyelashes; the general tenuity of the skin.

Lupus Erythematosus: A Study of the Disease. By Dr. W. B. Warde (*British Journal of Dermatology*, vol. xiv, No. 12).—In two previous communications in the same journal (vol. xiv, Nos. 9 and 10), the author gives the results of an examination of the mucous membranes of the nose and mouth, and of the ears in fifteen cases of lupus erythematosus. A large proportion suffered from either hypertrophic or atrophic rhinitis, and more than one-third from ozæna. A large proportion showed a marked deficiency of wax, with indications of atrophic changes in the meatus, and either erythematous or atrophic patches on the external ear. In several, the mucous membranes of the mouth showed atrophic patches, or a swollen condition of the membrane, or retention phenomena. Chilblains or coldness of extremities were present in two-thirds of the cases.

In the present paper, the author discusses these 15 specially examined cases, along with 15 others of lupus erythematosus, and 10 of closely allied conditions. His conclusions are as follows:—

1. That lupus erythematosus is not a distinct pathological entity, but merely one instance of a common process frequently met with in a certain class of individuals, *atrophic rhinitis* being another.

2. That the essential, and in rare instances the only, symptom is a pernicious œdema, hard to remove and apt to produce degenerative and atrophic changes.

3. That this œdema and vascular degeneration depends (a) *indirectly* on a feeble circulation leading to a state of malnutrition of the vessel walls, on strain placed on the vessels by flushing, on anatomical position, in that the skin is thinly stretched over unyielding parts, and on other unknown causes; (b) *directly* on exposure to heat and cold, injuries such as burns, and on the presence in the skin of various efflorescences due to poisons, certain fevers (toxins), microbic activity, and to other unknown causes.

5. That the vascular degeneration and atrophy may be directly induced by certain superficial types of lupus vulgaris, and be predisposed to by a tubercular inheritance or acquired tuberculosis, but that the lesions essential to the disease are in no sense tubercular.

Mycosis Fungoides and its Treatment by the X-rays. By Dr. W. A. Jamieson (*British Journal of Dermatology*, vol. xv, No. 1).—The author gives an account of two cases, the one interesting because it presented an unusual phase of the disease, the other because of the remarkable results of x-ray treatment. The first patient was an engineer, aged 73. He had enjoyed good health, though he admitted having had a sore on the penis forty-three years before. On the legs were small scars, suggestive of syphilitic ulceration. He came under observation on 27th May, 1901, his illness having begun three years before. After being overheated, some little pimples appeared on both wrists and, later, on his legs. They disappeared after a time. Two years later, a dry, scaly, itching condition appeared on the bridge of the nose, and spread over the forehead and cheeks. The hair fell out. The affected parts gradually became red and weeping, and, finally, presented a swollen, granular, œdematous, oozing surface. A similar condition appeared on the right leg below the knee. Nine months later, crusted areas, like an eczema, formed on both thighs. Itching was considerable, but afterwards a burning sensation took its place. Treatment proved of no avail. Ulcers and abscesses formed. He became emaciated and mentally weak, and in October was admitted to a lunatic asylum, where he shortly died.

The author remarks—"The early symptoms were those of a dry and scaly, and subsequently moist and crusted, eczema, but the sequences were wholly at variance with what we see in eczema. The skin in various parts broke down into ulcers, which never healed, while in places deep abscesses arose. There were no tumours, strictly speaking, yet the microscopical appearances and the mode in which it terminated fatally were quite compatible with the diagnosis of mycosis fungoides. The loss of hair as the disease advanced has been encountered in other instances, and has led to a comparison with leprosy. There was no reason to believe that the syphilis from which he had suffered long before had any relation to his ailment, and treatment on that supposition was rather detrimental than otherwise. It resembled most closely the case contributed to Galloway and MacLeod's article by Stephen Mackenzie, where 'the disease seemed restricted to the types showing erythrodermia, diffuse superficial infiltration followed by extensive ulceration of the surface, without the tendency to the production of massive granulomatous infiltrations or tumours.'"

The second patient was a married woman, aged 54. Her case presented the classical features of mycosis fungoides. There was the long prodromal period of nine years, with the dry, circumscribed pruriginous areas, and the eventual development of characteristic tumours closely set on the side of the jaw, varying from a pea to a walnut in size. Some were smooth and hemispherical, others ruptured and crateriform. On the chest was a patch of weeping eczema, and there were infiltrated areas on the chest and face. Itching was marked. The microscopical appearances confirmed the diagnosis.

The patient was treated by the x-rays. The exposures lasted from three to five minutes to each part, a soft tube being employed at a distance of 4 inches,

the interruptions being of medium rapidity. After each a little vaseline was smeared on. The effect was immediate. Not only did the tumours soon wholly melt away, but the thickened patches and the itching disappeared. After sixty exposures the patient had to return home, but a month later she reported that all the parts treated were entirely healed.

Dr. Jamieson, in concluding, says—"What has been accomplished in the way of cure of the fully established disease warrants the hope that, attacked betimes, still better results will be obtained, and, therefore, in future no effort must be spared to discriminate the condition in its inception. While we were unprovided with a cure it did not, perhaps, matter so much whether the symptoms in an individual instance pointed rather to a possible mycosis fungoides than to an obstinate eczema; but now, any circumscribed, very itchy, and rebellious eczematoid eruption is to be regarded with suspicion, and ought to be subjected, if at all possible, to the rays.

Books, Pamphlets, &c., Received.

- Atlas and Epitome of Human Histology and Microscopic Anatomy, by Dr. Johannes Sobotta, Edited by G. Carl Huber, M.D. Authorised Translation from the German. With 171 Illustrations on 80 Lithographic Plates, and 68 Text Illustrations. London: W. B. Saunders & Co. 1903.
- Atlas and Epitome of Diseases of the Mouth, Pharynx, and Nose, by Dr. L. Grünwald. Second Edition, Revised and Enlarged. Edited by James E. Newcomb, M.D. With 102 Illustrations on 42 Lithographic Plates, and 41 Figures in the Text. London: W. B. Saunders & Co. 1903.
- Physical Chemistry for Physicians and Biologists, by Dr. Ernest Cohen. Authorised Translation from the German, by Martin H. Fischer, M.D. New York: Henry Holt & Co. 1903.
- The Errors of Accommodation and Refraction of the Eye and their Treatment: A Handbook for Students, by Ernest Clarke. London: Baillière, Tindall & Cox. 1903. (5s. net.)
- The Transactions of the Society of Anæsthetists. Vol. V. London: John Bale, Sons & Danielsson, Limited. 1903.
- Report on Malaria at Ismalia and Suez, by Ronald Ross (Liverpool School of Tropical Medicine, Memoir IX). Published for the University Press of Liverpool by Longmans, Green & Co. 1903. (1s.)
- Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition, by Professor Dr. Carl von Noorden. Part III: Membranous Catarrh of the Intestines (Colica Mucosa). New York: E. B. Treat & Co. 1903. (50 cents.)
- Lippincott's Pocket Medical Dictionary, Edited by Ryland W. Greene, A.B. London: J. B. Lippincott Company. (3s. net.)
- Therapeutics of Infancy and Childhood, by A. Jacobi, M.D., LL.D. Third Edition. London: J. B. Lippincott Company. 1903. (18s. net.)

- A Treatise on Massage: Its History, Mode of Application, and Effects**, by Douglas Graham, M.D. Third Edition. Revised, Enlarged, and Illustrated. London: J. B. Lippincott Company. 1902.
- Diseases and Injuries of the Eye, with Their Medical and Surgical Treatment**, by George Lawson, F.R.C.S. Eng. Sixth Edition, with 249 Illustrations. Revised and in great measure Rewritten, by Arnold Lawson, F.R.C.S. Eng. London: Smith, Elder & Co. 1903.
- A Text-Book of Anatomy by American Authors**, Edited by Frederic Henry Gerrish, M.D. Second Edition. Revised and Enlarged. Illustrated with 1003 Engravings in Black and Colors. London: Henry Kimpton. 1903. (32s. net.)
- Colonial and Camp Sanitation**, by George Vivian Poore, M.D., F.R.C.P. With 11 Illustrations. London: Longmans, Green & Co. 1903. (2s. net.)
- Genito-Urinary Surgery and Venereal Diseases**, by J. William White, M.D., and Edward Martin, M.D. Illustrated with 244 Engravings and 7 Colored Plates. Fifth Edition. London: J. B. Lippincott Company. 1902. (21s. net.)
- Diseases of the Skin: An Outline of the Principles and Practice of Dermatology**, by Malcolm Morris. With 2 Coloured Plates and 58 Plain Figures. New Edition. London: Cassell & Company, Limited. (10s. 6d. net.)
- Reports from the Laboratory of the Royal College of Physicians, Edinburgh**, Edited by Sir John Batty Tuke, M.D., and D. Noël Paton, M.D. Vol. VIII. Edinburgh: Oliver & Boyd. 1903.
- Transactions of the American Surgical Association**. Vol. XX. Edited by Richard H. Harte, M.D. Printed for the Association. Philadelphia: William J. Dornan. 1902.

The following are published by J. F. Bergmann, Wiesbaden:—

- Die Technik der Lithotripsie**. Vorlesungen von Prof. Dr. Felix Guyon. Mit Ermächtigung des Autors übersetzt und bearbeitet von Dr. Georg Berg. 1903. (3s.)
- Die Hämolyse und ihre Bedeutung für die Immunitätslehre**. Von Dr. Med. Hans Sachs. 1902. (1s. 3d.)
- Die Reizungen des Nervus Sympathicus und Vagus beim Ulcus Ventriculi**. Mit besonderer Berücksichtigung ihrer Bedeutung für Diagnose und Therapie. Von Dr. Med. Wilh. Phönies. 1902. (3s.)
- Die Chloroform und Aethernarkose in der Praxis**. Von Dr. Koblanck. 1902. (1s. 3d.)
- Sexualleben und Nervenleiden**. Die Nervösen Störungen Sexuellen Ursprungs. Nebst einem Anhang über Prophylaxe und Behandlung der Sexuellen Neurasthenia. Von Dr. L. Löwenfeld. 1903. (6s.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 25TH APRIL, 1903.**

	WEEK ENDING				
	Mar. 28.	Apr. 4.	Apr. 11.	Apr. 18.	Apr. 25.
Mean temperature, . . .	47·3°	45·2°	47·4°	38·1°	41·9°
Mean range of temperature between day and night, .	13·0°	15·6°	15·5°	16·2°	23·4°
Number of days on which rain fell,	6	7	4	3	1
Amount of rainfall, . ins.	1·65	0·99	0·18	0·79	0·02
Deaths registered, . . .	300	290	256	281	307
Death-rates,	19·8	19·2	16·9	18·6	20·3
Zymotic death-rates, . .	2·8	1·6	1·7	1·7	2·3
Pulmonary death-rates, .	5·6	6·2	4·6	5·8	7·1
DEATHS—					
Under 1 year,	74	59	61	67	65
60 years and upwards, .	61	59	50	53	60
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles,	2	3	3	...	1
Scarlet fever,	3	...	1	...	1
Diphtheria,	3	1	2	4	...
Whooping-cough, . . .	22	12	12	11	22
Fever,	3	3	3	2	3
Diarrhœa,	9	5	5	9	8
Croup and laryngitis, .	1	...	2	...	...
Bronchitis, pneumonia, and pleurisy,	58	67	39	57	80
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Diphtheria and membranous croup,	5	15	6	8	7
Erysipelas,	14	15	14	23	20
Scarlet fever,	24	31	19	50	41
Typhus fever, . . . . .	...	...	...	...	...
Enteric fever,	8	16	8	11	17
Continued fever, . . .	...	...	...	...	...
Puerperal fever, . . .	1	1	...	2	1
Measles,*	52	56	39	59	54

* Measles not notifiable

SANITARY CHAMBERS,
GLASGOW, 29th April, 1903.

THE

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ORIGINAL ARTICLES.

A CONSIDERATION OF LABOUR AMONG PRIMITIVE PEOPLE.¹

By ROBT. JARDINE, M.D. EDIN., M.R.C.S. ENG., F.F.P.S.G., F.R.S. EDIN.,
Professor of Midwifery in St. Mungo's College ; Senior Physician
to the Glasgow Maternity Hospital ; Examiner in
Midwifery to the University of Glasgow.

GENTLEMEN,—My first duty to-day is to tender sincere thanks to the Governors of St. Mungo's College for the high honour they have conferred upon me by electing me to the Chair of Midwifery. For upwards of a quarter of a century this chair has been so worthily filled by our honoured friend, Dr. Stirton, that I must confess that I feel considerable diffidence in taking up the duties. I am not here to-day to pronounce a eulogium upon his work, but perhaps I may be pardoned if I allude to one or two facts in his career. Both in arts and medicine one of the most brilliant students of his day ; in mathematics, unequalled ; in anatomy, gold medallist, defeating in the contest one who for many years has held a professorship in that subject ; in midwifery, trained under the great Sir James Y. Simpson, and carrying off the highest honours in the class ; he is also one of the greatest living authorities on botany,

¹ Opening address delivered in St. Mungo's College, 24th April, 1903.

especially in the branch of it dealing with mosses. To succeed a man of such versatile genius, who, if he has not "taken all knowledge for his province," has certainly made many departments of knowledge his own, is a high honour. I cannot emulate his achievements; but in this one special department I shall do my very best to maintain a high standard of efficiency. It shall be my earnest endeavour to keep abreast of the times, and to impart to you the results of my personal experience, as well as the fruits of other men's work and thought.

The time at my disposal since my appointment has been so very short, that it has been out of the question for me to attempt to prepare an elaborate scientific address for you to-day, but I have put together a few observations on the methods of conducting labour among uncivilised people which may be of interest to you. This is a subject which has always had a peculiar fascination for me, and although I have never had an opportunity of making any personal observations in the matter, I have from time to time jotted down accounts of peculiar and interesting customs which have been observed by travellers and others. It is possible that some of you may have opportunities of doing so in the future, and I trust you will not fail to carefully note anything that may strike you as novel or important. In this country we cannot have opportunities of observing savages in labour, but by carefully watching the actions of uneducated women we can learn a good deal about what instinct has taught.

We are very apt to condemn off-hand ancient customs which at the first sight may seem absurd, whereas, if we looked carefully into them we would probably find that at the bottom there was a certain amount of commonsense and utility—a grain of wheat amidst much chaff. Take, for instance, the ancient and time-honoured custom of wrapping the stump of the cord in a charred linen rag. The old woman who originated that idea struck upon as aseptic a dressing as you could produce from an elaborate steriliser.

To a woman in her natural state, parturition is usually a comparatively easy matter, but to the highly civilised woman of the present day it is fraught with terrors almost as great as those of death. This is the penalty woman has to pay for her artificial way of living, and more especially of dressing. Civilisation has introduced many factors into our lives which people living in a state of nature do not have to reckon with. Nature is not a hard task-mistress, but if we infringe her laws we must be prepared to pay the penalty.

Parturition is a perfectly natural process, and if we wish to assist it we should undoubtedly try to do so in the way nature, "that grand old nurse," teaches us. In the words of White, "Man Midwife Extraordinary to the Lying-in Hospital, Manchester," in the latter half of the eighteenth century, "We should imitate nature through her whole process, . . . but we must also make proper allowance for these times and this country where women are so far removed from a state of nature." Nature has taught primitive women many ways of assisting the process of childbirth, which we, with all our vaunted skill in this era of science, have only comparatively recently rediscovered. As an example of this, take our method of dealing with the removal of the placenta. What is known as the Credé's method of expulsion of the placenta, or as it is sometimes called, the Dublin method, is claimed as one of the great advances made in midwifery within comparatively recent years; and yet, as I shall shortly tell you, this method has been practised for ages among some tribes of Indians, and may have been known to our aboriginal forebears who dwelt in the much discussed crannogs by the banks of the Clyde.

Among savages the place woman occupies in the economy of nature is almost without exception a very low one. In the words of Tennyson—

"Something better than his dog, a little dearer than his horse,"

she is generally looked upon as something fitted for toil and drudgery, and almost the only time she is ever treated with anything like consideration is when she is in what, in polite society, is known as "an interesting condition." Among some tribes she is then actually treated with kindness. Some of our workingmen might with advantage take a lesson from the untutored savages in regard to the treatment of their wives when in this condition. Among the Andaman Islanders the enlarged abdomen of the pregnant woman ensures for her reverent interest and attention. Even males of a portly habit of body are subjects of admiration. This reminds me of the story which is told about a half-witted boy who used to haunt the vicinity of the Rottenrow, and watch the patients who were admitted to the Maternity Hospital. He was apparently impressed with the fact that they all possessed protuberant abdomens, and one day when a man of the same build—probably a Bailie—came toiling up Portland Street, he watched him with interest, but to his surprise the supposed patient turned into the entrance below the Hospital. To the half-witted mind this was evidently a mistake, so he rushed

after the man and shouted—"Hey! man, you're up the wrang close."

Before beginning the consideration of labour, let us glance at a few of their beliefs and customs concerning menstruation. From the earliest days the moon has been credited with wonderful powers, capable of influencing mankind in many ways. The period of twenty-eight days between the menstrual epochs being the same as that between the new moons naturally led to the inference that the moon influenced the flow. Among the North American Indians, according to Englemann, a menstruating woman is said to have "moon in the ass," and in bygone days in France the woman was said to render her tribute to the moon. In the Old Testament strict rules are laid down for the guidance of a menstruating woman, who is considered unclean during the flow. A Parsee woman, when menstruating, is only allowed to sit upon stone or iron, and never on wood, the latter being more difficult to cleanse. In the present day, Jewish women keep apart from their husbands during that time, and for seven days after it has ceased. On the seventh night they have a bath of purification. They are accustomed to reckon the time of conception from the date of this bath.

This idea of uncleanness prevails among most primitive people, and in some tribes the woman is kept apart from other members, or she has to wear a distinctive badge to indicate her condition. Greater care is usually taken of her at these times, and, as a result, diseases peculiar to women are hardly known in these tribes. Their more civilised sisters might with advantage take a lesson from this. It is not so very long since the idea of uncleanness during menstruation was believed in among civilised people. It was at one time quite a common belief that a menstruating woman would turn wine sour, &c. As a matter of fact, from the point of view of asepsis, there is a modicum of truth in the belief. I am firmly convinced that a menstruating nurse, if she is not careful, may prove a source of infection to a puerperal woman or a case, say, of abdominal section. The cessation of menstruation is the sign of pregnancy universally recognised among primitive people.

Sterility is not very common. Savage Landor, however, states that among the hairy Ainu the half-breeds were nearly all sterile; but I am not aware of this being the case with any other half-breed race. With the exception of the Digger Indians of America, the hairy Ainu are the most primitive people in existence.

Among savages the tone of morality is fairly high. Abortions, as a rule, are not brought about except among tribes which have come in contact with white men. It is a deplorable fact that, as soon as white men come among primitive people, the moral tone of the latter degenerates. I am not, of course, referring to the missionaries, but to the "Lost Legion," of which Kipling says—

" We preach in advance of the Army,
We skirmish ahead of the Church."

This has been especially true among the American Indians. As soon as the women began to bear half-breed children, their labours became difficult from the increase in the size of the foetal head, and, as a consequence, they resorted to bringing on abortions. For this purpose they usually employ drugs taken by the mouth or pushed into the vagina, and hardly ever attempt to pass anything into the uterus. Among some peoples, various drugs are given about the third month to test whether or not the ovum is a sound one. If it is cast off, they consider it must have had something wrong with it, and that the woman is better rid of it. If the uterus resists expelling its contents, they conclude the conception is a good one, and rejoice accordingly.

No primitive race seems to have advanced sufficiently in obstetrical knowledge to make a vaginal examination—at least, to ascertain how the presenting part is progressing. The vulvar orifice is sometimes stretched by an attendant inserting her hands with the palms together, and then separating them. Quite recently I heard the very same process described by a medical man, and termed by him "dressing the perineum." It is only in very rare cases that the placenta is removed by inserting the hand into the vagina. To assist the process of parturition, they almost exclusively rely on posturing the patient and applying pressure from without. Medicines are sometimes given to increase uterine action, and vapour baths are frequently employed to soften the parts. In regard to posturing the patient, we, I think, may very well take lessons from them. The recognised conventional positions—viz., the dorsal on the Continent and in America, and the left lateral in this country—are not by any means, in all cases, the best suited to facilitate delivery of the foetus. As an example of the value of posture, I may instance what is known as the hanging-leg or Walcher position, which is most useful in difficult deliveries in contracted pelves. It is only within very recent years that this has been practised.

This is not, however, a posture which has been used among primitive people, so far as I have been able to find out; but one cannot be sure.

To a woman in a state of nature, labour is easy and very short in duration. The more primitive the people the easier it is, the average time being from one to two hours. Among the partially civilised it becomes more difficult, and lasts a much longer time. When the parents are of the same tribe it is much easier than when they are of different ones, especially of different nations. Labours with half-breed white children are often very difficult; this, of course, is due to the larger size of the half-breed's head. The comparative ease with which savage women give birth to children has frequently been noticed by travellers. Audubon, the celebrated naturalist, relates an instance of this which happened when he was camping with an Indian tribe on the banks of the Mississippi. He says—"When I awoke in the morning, and made my rounds through the camp, I found that a squaw had been delivered of beautiful twins during the night, and I saw the same squaw at work tanning deerskins. She had cut two vines at the roots of opposite trees, and made a cradle of birch-bark, in which the newborn ones were wafted to and fro with a push of her hand, while from time to time she gave them the breast, and was apparently as unconcerned as if the event had not taken place." Dr. Rohlf's also mentions that in a small oasis in the desert a woman gave birth in the night and next morning prepared breakfast for him. Many similar cases are reported by doctors on the various Indian agency reserves in America. Among our lower orders it is not an uncommon thing for a woman to be delivered and keep about her usual employment, especially if she is anxious to conceal the birth. Some years ago a hawker woman gave birth to a child on the roadside near Hamilton. She rolled the baby in her shawl, came into the city by train, and then walked over a mile to her house. Of course, these cases are the exception in this country, while among savages they are the rule.

Among nomadic tribes no special tent or wigwam is set apart for the woman, but she generally selects a secluded spot and erects a rude shelter. Preference is always given to the bank of a running stream, and she usually bathes herself and the babe immediately after the placenta is expelled. If hæmorrhage should come on, which fortunately is rarely the case, the water is near at hand to plunge into. Among stationary tribes a lodge or room in a hut is generally given

up to the woman. Among the Lapps the bath hut is usually selected. The American Indians often put up a temporary erection outside the encampment. A circular enclosure is formed of bushes, leaving a small gateway. Two holes are dug inside, one to receive the discharges and the other to contain heated stones, over which water is poured to give the patient a vapour bath. Outside three stakes are driven into the ground, about 10 feet apart, for the woman to cling to as the pains seize her while walking to and fro. The parturient is usually attended by one or two other women, generally old ones who have had a number of children and are supposed to know all about the process. Their qualifications are much on a footing with those of many of the old hags you may find attending confinements here.

Among some tribes there are regular midwives. The office is usually a hereditary one, like that of bone-setters in this country. The midwife, like the poet, is born and not made. Midwives, indeed, are very old institutions. In the first chapter of Exodus you will remember the King of Egypt commanded the two Hebrew midwives, Shiprah and Puah, that when they saw the Hebrew women "on the stools," they were to kill all the male children born. The midwives disobeyed his orders, and gave as their excuse that "the Hebrew women are not as the Egyptian women: for they are lively, and are delivered ere the midwives come in unto them." The Hebrew women would no doubt be delivered more quickly than the Egyptian, as they led a free, active, outdoor life, while the Egyptians would be more like the civilised women of the present day.

The wives of chiefs are sometimes attended by medicine men. Their assistance usually consists of incantations, howlings, and shaking of rattles to keep the devil away. Among Mohammedans the priest is occasionally called in difficult cases, and his treatment consists of reciting scraps of the Koran and spitting on the patient, which certainly won't do much harm if it does no good. Among some tribes the unfortunate woman is not secluded in any way, but men, women, and children are allowed to be present, and they generally keep up an incessant noise of shouting to drown the woman's cries, and also to frighten the devil.

A very curious custom prevails among a few tribes in North and South America, and also in some parts of Africa and Asia, if I mistake not. The husband takes to his bed as soon as the labour comes on, and in some cases he does the groaning. He remains in bed and has consolatory visits paid him for

some days, while the wife goes about her usual work immediately after the child is born. Among a few North American Indian tribes the father hides in the woods for some days, as if he were ashamed of himself. What these customs signify it is very difficult to make out, but perhaps they have something to do with acknowledging the paternity of the child.

It seems to be a common idea among primitive people that the foetus voluntarily comes forth from the womb. Some attempt to starve it out by abstaining from food for days when near full time, in the hope that hunger will cause it to come forth. They quite recognise that the starving process causes the fat to disappear about the genitals, and makes the passage more relaxed, but they fail to perceive that the woman's strength becomes very much spent. Others imagine that the foetus can be coaxed from his haunt by using terms of endearment. It is not so very long since obstetricians imagined that the foetus assisted its exit by voluntary efforts, just as the chick does by breaking the shell. This is absurd, of course, as there is no analogy between the birth of a child and the hatching of a chick. The laying of the egg is somewhat analogous to the act of parturition, but the egg no more helps itself onward by its own powers than the foetus does.

Harvey, in his work on *Generation*, relates the case of the foaling of a mare which had been infibulated—i.e., had had the labia fastened together with iron rings. The result was that the whole left side of the pudendum was "torn away from the pelvis by the almost incredible efforts of the foetus, that a gap sufficiently wide was made to admit of its escape, such is the force and vigour of a full grown foetus."

Now we come to consider a most important question—viz., the posture instinctively assumed by an untutored woman during the act of parturition. However much savages may err in their theories concerning the phenomena of labour, we may be sure that the women, untrammelled by the usages of society, will instinctively assume the posture best calculated for easy and speedy delivery. It is otherwise with civilised women, as they are so bound by social customs that they cannot act as nature prompts them to do. Among our lower orders we sometimes see labours conducted in precisely the same way as among savages, regardless of Mrs. Grundy.

The posture assumed by the women of different tribes varies considerably; but they are seldom delivered lying down. By a few the erect posture is maintained all through labour. During the first stage this is usual even with us, but as soon as that stage is over our patients lie

down. Those who are delivered standing, walk about in the intervals between the pains, but cling to a stake, limb of a tree, a rope, or clasp their arms round the neck of a friend. In one Indian tribe the woman is delivered erect clasping her arms round the neck of a male friend. A young bachelor buck is usually selected for this delicate office. According to Spence, this posture of clinging to the neck of a friend was quite common in the North of Scotland last century. Savonarola taught in Italy in the fifteenth century that in difficult labours the woman should be delivered hanging to the neck of a stout friend, or else in the knee-and-elbow position. In a few cases the wretched woman is tied up by the arms so that her toes barely touch the ground, and there she is left until the child is born.

The squatting posture is one that is chosen by many. This is the position a woman instinctively assumes when attending to the calls of nature. Berry Hart has shown that the acts of micturition, defæcation, and parturition are analogous. He says, "These three expulsive phenomena are thus quite analogous in their mechanism, and the mechanisms of defæcation and the expulsion of the fœtus are identical." It is very interesting to note that savage women instinctively assume the same posture for performing these three acts. They have rightly interpreted the teachings of nature. This posture is undoubtedly the one in which the greatest amount of inter-abdominal pressure can be brought to bear on the pelvic contents. I have occasionally seen women assume it in difficult labours with the happiest results. One case I remember where no advance had taken place for some time, and I had decided to use forceps, when the woman, in her restless endeavours to obtain relief, rose to a squatting posture in the bed, and the child was expelled almost at once. In another case the child was suddenly expelled while the woman was squatting on a chamber-pot. I had examined her only a minute or so before, and had found the breech presenting high up at the brim. She had always had difficult labours before. In his letters from Tangier, the late Ernest Hart says, "Moorish women are invariably delivered squatting." He thus describes a labour scene:—"When a woman is about to be confined, there are two rings put in the ceiling, to which a towel is attached for a puller. When the head begins to come down, a towel is coiled up into a sort of cone. The woman is then put on the edge of a box, and the towel is placed underneath the perineum and forms an admirable support. She is then supported by a woman on each side and a woman behind

her, the midwife squatting in front of her. Immediately after her confinement she is dosed with a mixture of honey, aromatics, and herbs, of which lavender is the chief. She then receives a portion of broth, and at no time during her puerperal period is animal food withheld."

Another common posture is the knee-elbow one. The woman kneels with her chest or arms against a support. This is an attitude that is very general among poor women in our own country. As soon as a pain comes on, the patient kneels by a chair or the bedside, and the fœtus is often expelled before she can get into bed. Among Irish women, delivery in this position is quite common, and I have heard them assert the child would never be born if they went to bed.

The semiprone position is another favourite one, especially among the lower order of French-Canadians. Closely allied to this is the semi-reclining position in the lap of an attendant. White, of Manchester, quotes cases of delivery on the lap of an attendant as being quite common near Manchester 120 years ago. He condemns this posture, and the upright one also, and says that "woman in a state of nature would not think of being delivered in an upright posture, or upon the knee of an attendant."¹ It is practised by some of the Indian tribes, and seems to be common among civilised people in remote country districts. The unfortunate husband is generally the one selected to hold the patient. I think there can be little doubt that obstetric chairs, which were so much in vogue at one time, and are still used in Corsica and the East, owe their origin to this sitting upon the lap of an attendant. Dr. Metzler discovered an obstetric chair in a remote village in Germany which certainly owed its origin to this. The wife of a carpenter had found her labour so easy while sitting in the lap of her husband that the poor man was eagerly sought after to attend all the confinements in the village in the same capacity. When the novelty wore off, I suppose he found it too much of a joke, so he devised a stool to take his place, and turned out a very good obstetric chair, although he had never heard of such a contrivance before.

The recumbent posture upon the back or side is not often assumed. In one Indian tribe, the woman lies upon her belly during the final stages, with a support placed under the abdomen. An assistant stands astride the patient, with his

¹ *A Treatise on the Management of Pregnant and Lying-in Women, &c.*, by Chas. White, Esq., F.R.S., Man Midwife Extraordinary to the Lying-in Hospital, Manchester.

hands clasped below the fundus, and, as it were, lifts the woman during the pains, thus assisting the expulsive powers of the uterus.

We thus see that the position instinctively taken up by primitive women is not the one women are usually delivered in among civilised nations. The knee-elbow and squatting postures are undoubtedly the ones best suited to facilitate expulsion. Not only do we get the full benefit of the action of gravity, but the woman is in the best position to bring her abdominal muscles into play, and the tilting of the pelvis materially straightens the canal. The great drawback to these postures is, of course, the danger of hæmorrhage, but among savages this very rarely occurs. In the first and early part of the second stages of labour we should always encourage our patients to assume either of these postures during the pains, and in some difficult cases even in the later part of the second stage.

In difficult labour, savages have very few expedients to assist, and those they do try are unfortunately generally fraught with harm to the patient. Vapour baths are frequently used to soften the parts, medicines are taken internally, and copious draughts of warm water are drunk. The herbs used are generally found to have some action on the uterus. The parts are frequently oiled, and in some cases the midwife distends the vagina with her hands. They rarely support the perineum. The Moors do this by means of a folded towel, as I have already mentioned. Kneading and massaging the abdomen is very generally resorted to, or the abdomen is compressed by an assistant clasping her arms round the patient. In some cases, the woman is shaken much as one shakes a sack to empty its contents. If there is much delay, the woman is fastened up by the shoulders and one or more assistants clasp their arms round her and strip down, as it were, when either the child will be expelled or the uterus ruptured. This is common among the Mexicans.

Another equally severe form of treatment is for the patient to be placed on her back while the assistant tramples over the abdomen with her bare feet. The abdomen is also sometimes compressed by means of a cloth tightened up by a stick twisted into it, or by a friend pulling firmly on the ends of it with her feet braced against the back of the pelvis, while the patient is in a semi-reclining posture, holding to an upright, with her feet firmly braced. Felkin describes this latter position. The pressure of the attendant's feet upon the back

and upper part of the innominate bones would tilt the latter forwards and give exactly the same enlargement of the brim as is got in the Walcher position by the hanging legs.

Many of them have recognised the effect of a sudden shock in causing expulsion. Thus, one of the American Indian agency doctors relates how a lingering labour was suddenly terminated. The woman was fastened to a stake, and a famous warrior rode at her as if he intended to kill her, but drew his horse aside when almost on top of her. The sudden fright caused almost immediate delivery. The same custom has been seen among the Arabs.

Fortunately, difficult labours are rare among primitive people. Cross-births are the most dreaded of all, and are generally fatal. To ensure a proper position of the child, massaging or bandaging the abdomen after the fifth month of pregnancy is carried out by some. Among the Japanese, massaging the abdomen during the latter half of gestation is a recognised routine practice. The patient, who is naked, stands in front of the doctor, and places her hands on his shoulders, while he manipulates the abdomen. It is only the fathers of the profession who are employed in so delicate an operation. No young obstetrician need apply. When a difficult labour occurs, some tribes consider it is better the mother and foetus should perish, as they imagine the child is an evil one, and if born alive would cause disaster to the tribe; and, as for the poor woman, they think she had better go than perhaps have another opportunity of bringing a demon into the world. Among the Moors, in cases of abnormal presentations, a large earthenware pot or pan is placed upon the abdomen, and is twisted about with great pressure, so as to produce a sort of external abdominal version. This, unfortunately, often results in rupture of the uterus and death of both mother and child.

In an interesting paper read before the Edinburgh Obstetrical Society in 1884, Dr. Felkin gave a very graphic account of labours he witnessed in Central Africa. The first case he saw was one in which the woman had been in labour for two days, and, as the midwives had evidently given her up as hopeless, she was handed over to a magician, who was busily sharpening a knife preparatory to performing Cæsarean section in the interest of the child. Dr. Felkin, after some persuasive promises of presents, was allowed to examine her, and he found it was a case of simple uterine inertia. He gained permission to try if he could deliver her, and did so with forceps. Both mother and child did well.

In Uganda, he had the good fortune to witness a successful performance of Cæsarean section in 1879. The first successful one in Scotland was performed in Edinburgh in 1888 by Berry Hart, so, you see, the negroes in Central Africa were somewhat ahead of us in that line.

The following is Dr. Felkin's graphic account of the operation, taken from vol. ix of the *Edinburgh Obstetrical Transactions*:—

"The woman lay upon an inclined bed, the head of which was placed against the side of the hut. She was liberally supplied with banana wine, and was in a state of semi-intoxication. She was perfectly naked. A band of mbugu or bark cloth fastened her thorax to the bed, another band of cloth fastened down her thighs, and a man held her ankles. Another man, standing on her right side, steadied her abdomen. The operator stood, as I entered the hut, on her left side, holding his knife aloft with his right hand and muttering an incantation. This being done, he washed his hands and the patient's abdomen, first with banana wine and then with water. Then, having uttered a shrill cry, which was taken up by a small crowd assembled outside the hut, he proceeded to make a rapid cut in the middle line, commencing a little above the pubes, and ending just below the umbilicus. The whole abdominal wall and part of the uterine wall were severed by this incision, and the liquor amnii escaped; a few bleeding points in the abdominal wall were touched with a red-hot iron by an assistant. The operator next rapidly finished the incision in the uterine wall; his assistant held the abdominal walls apart with both hands, and, as soon as the uterine wall was divided, he hooked it up also with two fingers. The child was next rapidly removed and given to another assistant after the cord had been cut, and then the operator, dropping his knife, seized the contracting uterus with both his hands, and gave it a squeeze or two. He next put his hand into the uterine cavity through the incision, and, with two or three fingers, dilated the cervix uteri from within outwards. He then cleared the uterus of clots and placenta, which had by this time become detached, removing it through the abdominal wound. His assistant endeavoured, but not very successfully, to prevent the escape of the intestines through the wound. The red-hot iron was next used to check some further hæmorrhage from the abdominal wound, but I noticed that it was very sparingly applied. All this time the chief 'surgeon' was keeping up firm pressure on the uterus, which he continued to do till it was firmly contracted. No

sutures were put into the uterine wall. The assistant who had held the abdominal walls now slipped his hands to each extremity of the wound, and a porous grass mat was placed over the wound and secured there. The bands which fastened the woman down were cut, and she was gently turned to the edge of the bed, and then over into the arms of the assistants, so that the fluid in the abdominal cavity could drain away on to the floor. She was then replaced in her former position, and the mat having been removed, the edges of the wound, *i.e.*, the peritoneum, were brought into close apposition, seven thin iron spikes, well polished, like acupuncture needles, being used for the purpose, and fastened by string made from bark. A paste, prepared by chewing two different roots and spitting the pulp into a bowl, was then thickly plastered over the wound, a banana leaf warmed over the fire being placed on the top of that, and, finally, a firm bandage of mbugu cloth, completed the operation.

"Until the pins were placed in position the patient had uttered no cry, and an hour after the operation she appeared to be quite comfortable. Her temperature, as far as I know, never rose above 99·6° F., except on the second night after the operation, when it was 101° F.; her pulse being 108.

"The wound was dressed on the third morning, and one pin was then removed. Three more were removed on the fifth, and the rest on the sixth, day. At each dressing, fresh pulp was applied, and a little pus which had formed was removed by a sponge formed of pulp. A firm bandage was applied after each dressing. Eleven days after the operation the wound was entirely healed, and the woman seemed quite comfortable."

When we come to consider the management of the third stage of labour, we find many tribes have instinctively adopted a method of treatment which we look upon as one of the advances made in obstetrics within recent times, *viz.*, the expulsion of the placenta by kneading the uterus through the abdominal wall, or what is known as Credé's method. Some leave the expulsion of the placenta entirely to nature, while others, again, attempt to expel it at once. One would naturally expect the cord would be used to draw it out, but, fortunately, this is not done nearly so often as among uneducated women in civilised countries. Some of them dread that the cord will pass back into the abdomen and kill the woman, so they attach a thong to it and tie it to the woman's foot to prevent this, and also that she may put traction upon it by stretching herself. This fear is not confined to savages,

as I have heard an old woman in Glasgow express the same, and a friend of mine practising in St. John's, Newfoundland, tells me that he has several times been sent for by so-called midwives to remove an adherent placenta, and has found the cord secured to the woman's thigh to prevent this supposed fatal accident. Drugs are sometimes given, generally emetics or snuffs. Blowing into a gourd or bottle is another method. Sneezing, coughing, and blowing into a bottle are all quite common in this country. I have even known the friends take a spell at blowing into the bottle with the idea of assisting the patient. Usually the abdomen is kneaded, and firm pressure is exerted over the uterine fundus. This is done with the hands or sometimes with the bare feet. Some tribes use what is known as the squaw belt. This is 4 or 5 inches broad, and is buckled round the body over the uterus and drawn tight, expelling the placenta at once. The same effect is got by the woman leaning against a padded stick. Some of the negroes use a band of cloth, which a friend twists firmly by means of a stick. By some, a stream of cold water is allowed to fall on the abdomen from a height. In very few cases do they attempt to extract the placenta manually. If it is morbidly adherent it remains in the uterus, and septicæmia may result. As the woman generally assumes the upright posture immediately after the placenta is expelled, the uterus thoroughly empties itself of all clots, and there is thus little risk of septic mischief arising. Free drainage of the uterus and vagina is not obtained if we keep our patients lying perfectly flat on their backs. At all events, they should be encouraged to rise on their hands and knees to attend to the calls of nature, and I always insist on this if the patient is strong enough.

During the puerperal period in many tribes, especially in nomadic ones, the woman goes about her daily work as if nothing had happened, but with some she is carefully nursed for a week or so. In a few instances she is very much neglected, and sometimes both mother and child perish from sheer starvation. In Siam, what may be called a process of purification by fire has to be undergone for a month. The woman lies naked on a couch in front of a hot fire, exposing her abdomen to it until it is nearly roasted, and then turning her back for its share of heating. This alternate roasting of back and belly goes on day after day for a month until she is purified or dead.

The cord is not usually separated until the placenta is expelled. In rare cases it is cut short and astringents

applied, but it is generally left 2 or more inches long, and tied with some kind of fibre. It is cut with a knife, sharp shell, a flint, or a sharp leaf, and in a few cases it is bitten through. When it is not tied, if it should bleed, the stump is caught between the teeth and compressed.

The child is usually bathed in cold water at once, the mother taking a bath at the same time. Some put it to the breast immediately, while others wait a day or two. The children are generally nursed for several years, and No. 1 is often at the breast when No. 2 arrives. Among the Moors the child is not washed at once, but is rubbed all over with henna or some other substance to strengthen it. The Chinese simply scrape the vernix caseosa off the child with brown paper, and swaddle it tightly round and round like a parcel, leaving the head out. A medical missionary once told me an amusing experience he had had among the Chinese. He insisted on washing a baby after he had delivered it. The friends of the woman were very adverse to this, but the grateful patient said he might do what he liked with the baby. Contrary to the expectations of the old women, nothing terrible happened to the child, and it actually seemed to behave better than an unwashed one. The news of the wonderful innovation soon spread, and when the doctor called a day or two later he found all the mothers of the district waiting for him and demanding that he should wash their babies for them. He could only get out of it by ignominiously fleeing.

By some peoples the newborn infant is massaged and stretched to strengthen the wee limbs. Among the North American Indians the papoose or baby is strapped on a board. When certain peculiarities of feature are considered great marks of beauty, steps are at once taken to mould the parts. One Indian tribe flattens the forehead by the continued pressure of a board. Among the Chinese compression of the feet of the girl babies is the fashion, but this is not done until they are 5 or 6 years of age.

In conclusion, I think you will agree with me that although many of the methods adopted by uncivilised people to assist labour are decidedly bad, yet, in regard to posturing, massaging the abdomen, expelling the placenta by external pressure, they are not far behind ourselves. Nature has taught them ages ago what science has only recently discovered. Should this not teach us to be close observers of nature's ways of overcoming difficulties, so that when we have to interfere we may do so in a way which will assist nature and not oppose her?

VOLKMANN'S CONTRACTURE.¹

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THE following two cases are published as an additional² contribution to a subject which is of considerable interest to those who may be concerned with the treatment of fractures or other conditions of the fore-arm requiring the application of splints. In both of the cases splints were used, and I think that they are responsible for the deformity. Applied too tightly, splints cause a pressure-ischæmia. This in the case of muscle results in a coagulation of muscle fibre; these are replaced by scar-tissue, the subsequent contraction of which shortens the muscle. Such, in brief, is the pathology of the condition, at least, in so far as the two cases here described are concerned. In an exhaustive paper³ recently published by Dudgeon, reference is made to the view held by the late Mr. Davies-Colley, that the scar-tissue in the muscle may be the result of a myositis, depending upon the spreading of inflammation from skin which has been subjected to splint-pressure, or of a suppuration of all the soft parts. A suppurative condition might be adduced as the etiological factor in the second of the cases reported here (Case III), but I incline to the belief that splint-pressure has been the cause. The scars on the front of the limb are, with the exception of the uppermost, practically non-adherent to the deeper parts, and while the uppermost is slightly adherent over the pronator teres, yet this muscle is not contracted. The large bulk of the flexor muscles apparently predisposes them to suffer most from the pressure of splints. The theory of extension of inflammation from skin lesion to deeper structures does not apply to Case II, inasmuch as the scars are situated not over the muscle but over the tendons.

The cases which I have now to record are the following:—

¹ Paper read, and patients shown, at meetings of the Glasgow Medico-Chirurgical Society on 21st November, 1902, and 3rd April, 1903.

² See former paper, *Glasgow Medical Journal*, November, 1900, and *Glasgow Medico-Chirurgical Transactions*, vol. iii, p. 189.

³ *Lancet*, 11th January, 1902. This paper contains a very good, though not complete, summary of cases published to date.

CASE II.—*Girl, aged 7. Fracture of fore-arm; Splints worn for six weeks, at end of which time contracture observed—Tendon-lengthening, gangrene of part of flap, adhesions—Function partly restored.*

Ruth C., aged 7, was brought to the Dispensary of the Western Infirmary towards the end of October, 1902, on account of stiffness of the left hand and flexion of fingers.

The history of the case was that, seven weeks before, she was swinging a companion, and that while pushing the swing forward she lost her balance and fell with her left hand under her. On her being taken home, her mother observed that the fore-arm was bent, a little above the wrist. She then took the girl to a medical man, who is stated to have said that the arm was not properly broken. He thereupon broke it across his knee, and applied splints to the front and back of the fore-arm, extending from the elbow to the roots of the fingers. These splints were removed and readjusted on two occasions, and were finally left off at the end of six weeks. The mother states that the hand and fingers were much swollen, and that one week after the accident they were blistered, "as if put in boiling oil." The girl complained continually of great pain in the arm and hand. The blisters were punctured, or broken accidentally, and they have never quite healed. When the splints were removed it was noticed that the fingers were flexed, and on the mother trying to extend them, pain was complained of above the wrist, both in front and behind. The blisters on the backs of the fingers healed after a fashion after some time, but the power of extension of the fingers had not been recovered, and the patient does not use the hand at all. At the time of removal of the splints there was noticed, further, a sore on the flexor surface of the limb in its lower half: this sore healed with dressing.

Examination.—The fore-arm and hand are cold and livid, and the limb is wasted. Healed abrasions are present on the dorsal surface of the first interphalangeal joints of the index, medius, and ring fingers. The skin of the finger is glazed. The thumb and fingers are kept flexed, but this hardly affects the proximal phalanges at all. She is able to straighten to a slight extent the ring finger and minimus, but any attempt to extend the others is accompanied by flexion of the wrist. When the fingers are flexed, and allowed to remain so, she can extend the hand on the fore-arm to an angle of about 30°; in order to straighten the fingers to their full extent it is necessary to flex the wrist to a similar angle. This is well shown in accompanying plate from photographs taken by

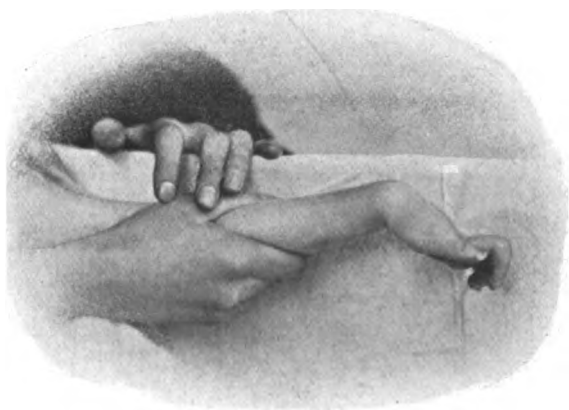
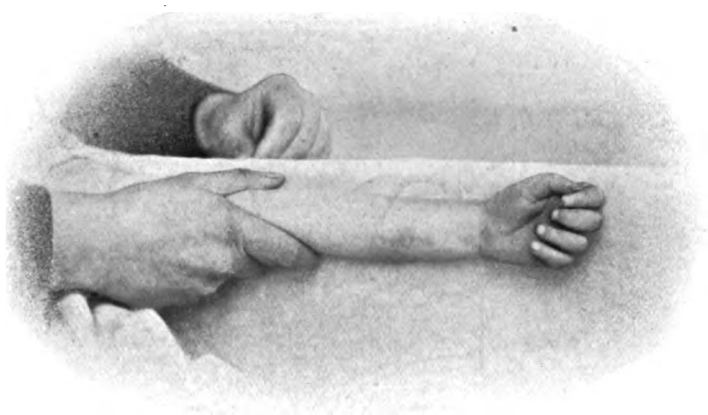


CASE II - Girl, April 7. Fracture of forearm. Seven weeks, at end of which time contracture exists. The hand, although gangrene of part of phalanges has been completely restored.

Kath. C., aged 7, was brought to the Dispensary, at Western Innaway, towards the end of October 1901, on account of stiffness of the left hand and flexion of fingers.

The history of the case was that seven weeks before, in swinging of a companion, and that while pushing her out forward she lost her balance and fell with her left hand on her head. On her being taken home, her mother observed that her forearm was bent a little above the wrist. She then took the girl to a medical man who is stated to have said that the arm was not properly broken. He then removed the splints from his knee, and applied splints to the front and back of the forearm, extending from the elbow to the roots of the fingers. These splints were removed and readjusted once or twice, and were finally left off at the end of six weeks. The mother states that the hand and fingers were much swollen, and that one week after the accident they were blistered, as if by boiling oil. The girl complained continually of going to sleep with the arm and hand stiff. The blisters were punctured, and healed accidentally, and they have never quite healed. When the splints were removed it was noticed that the fingers were flexed, and on the mother trying to extend them, pain was complained of above the wrist, both in front and behind. Blisters on the backs of the fingers healed after a few days, but some time, but the power of extension of the fingers has not been recovered, and the patient does not use the hand. At the time of removal of the splints there was a large sore, further, a sore on the flexor surface of the limb. This, except this sore healed with dressing.

Examination.—The forearm and hand are cold and stiff, and the limb is wasted. Healed abrasions are exposed on the dorsal surface of the first interphalangeal joints of the index, middle, and ring fingers. The skin of the fingers is pale. The thumb and fingers are kept flexed, but this is not due to the proximal phalanges at all. She is able to straighten the slight extent the ring finger and middle, but any further extension the others is accompanied by flexion of the wrist. When the fingers are flexed and allowed to remain so, she can extend the hand on the forearm to an angle of about 45°, in order to straighten the fingers to their full extent. It is necessary to flex the wrist to a similar angle. This is as shown in accompanying plate from photographs taken.



Dr. Archibald, one of the house-physicians. On the flexor surface of the fore-arm a scar occupies a considerable area in the lower half of the limb. Behind, about 1 inch above the lower end of the radius, is a similar but smaller scar. Thickening of the radius and ulna is present at the junction of the middle and lower thirds of these bones.

On getting the patient to flex her fingers, slight movement is felt in the flexor bellies (in the upper part of the limb). The following particulars are noted:—

1. *Measurements.*—Both limbs are equal in length. Greatest circumference—R., barely 13·5 cm., + 0·75 cm. on contracting the muscles; L., barely 12·75 cm., + nearly 0·5 cm. on closing the fist. In the lower half of the limbs, measurements are the same in both.

2. *Movements.*—Pronation and supination good. Thumb of affected hand is not kept so much flexed as remaining digits.

3. *Sensation.*—No involvement of median or ulnar areas is apparent, so far as tested roughly by touching the parts with the point of my finger.

4. *Atrophy.*—While the limb is soft and wasted, there is no atrophy of individual muscles in the fore-arm or palm (*e.g.*, no interosseous furrowing, flattening of palm, or abduction of minimus).

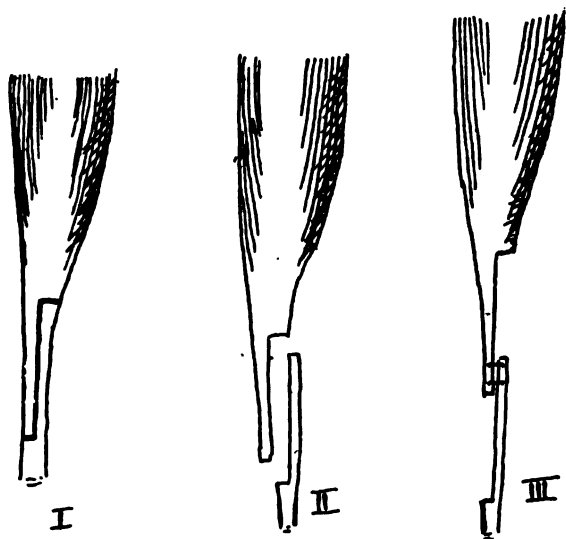
The electrical examination was not made till the morning of the operation: but as regards sensation and atrophy, it was thought, and so expressed to the meeting, that, notwithstanding the occurrence of blistering and the glazed skin of the fingers, there was no nerve-involvement.

That the contracture tended to increase was shown by the fact that on 19th November it was noted that the wrist could not be extended beyond the straight position (in long axis of fore-arm). The power to supinate was, however, noted as complete, although the movement required some effort. It was decided, in spite of the fact that the contracture was progressive, to perform tendon-lengthening. This decision was come to in the belief that the operation would tend to prevent further deformity by permitting use of the limb, and so allowing the muscle to develop. It was further decided that, on account of the nervousness of the child, the electrical examination of the muscles should be postponed until she was anæsthetised for the operation.

This examination was carried out by Dr. John Love, who reported as follows:—

"22nd November, 1902.—The muscles of the arm were explored electrically when the child was under chloroform,

and all of the muscles of the fore-arm and hand, both flexors and extensors, gave quite normal responses to both a faradic and galvanic current, as regards the *mole* of the contractions and the *series*; that is, with a galvanic current the reactions were of the sudden, lightning-like character, and the kathodal closure contraction came first. Although no attempt was made to measure either form of current, it is, however, to be said that, compared with the other arm, the muscular responses for a like current were much more vigorous in the sound arm, especially in the flexors. In short, while the responses are quite normal in form and in series, there was a quantitative



Anderson's method of tendon-lengthening (after Littlewood).

diminution to both forms of current, a result which is not unlikely, since the flexor group was already in a state of contracture and incapable of much further shortening under any form of stimulation; or it may be that only some fibres had remained relatively sound, and it is only these which were capable of response."

Operation.—The flexor tendons were exposed in the lower third of the fore-arm by reflecting upwards a flap of about 3 inches in length and the breadth of the limb. The extremity of this flap crossed the hand just below the crease of the wrist, and it was hoped that by cutting it so low down the

free edge would not only be away from the seat of operation in the tendons, but that it would also receive a good blood-supply from the thenar and hypothenar regions. That this hope was not realised will be seen in the sequel. The flap having been raised, all of the flexor tendons, with the exception of that of the flexor carpi ulnaris, were lengthened by means of the Z incision (see illustration p. 420). About the middle of the fore-arm some cicatricial tissue was found below the subcutaneous tissue; this did not correspond to the area of the scar already described. The palmaris longus was absent, and the median nerve (of large size) was quickly exposed when the deep fascia was divided. The nerve was then pulled outwards to allow of the tendons beneath being exposed. The exposure of these stopped short by about 1 inch from the transverse skin incision in the hand. The tendons were split for $1\frac{1}{2}$ inch and then divided, the fingers were then extended and the tendons sutured with Hartmann's fine catgut. The upper end of the split extended into that portion of the tendon embedded in muscular fibres; this was unavoidable owing to the wish to keep well above the region of the annular ligament. The tendons of the flexor profundus exhibited bulbous swelling in their upper parts in the immediate vicinity of the fracture. A piece of one of these tendons was removed for examination, also a small piece of one tapering lower extremity of the flexor sublimis muscle. The skin was sutured with silkworm-gut, and no drainage was provided. The fore-arm and hand were put up on anterior splint, with wrist and fingers fully extended. The operation was carried out by the "bloodless method," and the elastic bandage was on for $1\frac{1}{4}$ to $1\frac{1}{2}$ hour.

The anæsthetic employed to begin with was chloroform, but the breathing became sighing, and ether was substituted.

Pathological Report by Dr. A. R. Ferguson: "I. Muscle.—There is an increase generally of the interstitial tissue, which is practically everywhere of well-formed fibrous type.

"Small areas of interstitial hæmorrhage are also observed—possibly these have been caused by the slight manipulation involved during removal of the specimen.

"The muscle fibres are irregularly swollen, and of hyaline appearance. Frequently such fibres in the sections exhibit transverse 'fracture-lines.' The transverse striation is altogether lost in the fibres most affected by the hyaline change, and longitudinal fibrillation is the more distinct feature in the fibres less affected. Many diminutive and broken fibres occur between the larger hyaline fibres above mentioned.

"In other areas, more directly atrophic changes are found in the fibres, and in these situations the sarcolemma nuclei are multiplied.

"II. *Tendon.*—A few atrophied muscle fibres occur scattered between the tendon-fibre bundles. There are evidences of newly forming connective tissue fibres throughout the latter, these younger fibres running in delicate parallel strands between the older fibres.

"Areas of mononuclear cell (lymphocyte) infiltration, along with a few corpuscles of proliferating connective tissue type, occur round the vessels, the walls of which, taking the nature of the tissue into account, seem unduly thickened."

Subsequent course.—The terminal part of the flap became gangrenous to the extent of 1 inch, and the resulting scar became adherent to subjacent tendons. As a result, the power of the long flexor muscles was in abeyance.

22nd December, 1902.—Dr. Love attempted an electrical examination to-day without an anæsthetic, but the child got into a panic, and the exploration had to be discontinued. He ascertained, however, that the flexors of the fingers gave fairly good faradic responses with a very moderate current.

The first phalanges could be flexed by the action of the lumbricales and interossei, but the distal bones remained in position of extension. She could pick up objects easily enough, but was disinclined to use the hand.

It was hoped that subcutaneous section of scar would allow the restoration of movements, but when this was done (16th January, 1903) the immediate application of the battery to the long flexor muscles produced no movement of the fingers. The wrist tending to become flexed, a back splint was applied. Dr. Love reported on this occasion:—"The faradic current was not available, so to-day the high-frequency current was used instead as being essentially the same in action. With the discharges by sparks, good responses were got in both extensors and flexors of the wrists and fingers of the right side, but on the left, while the extensors gave a good response, and even the lumbricales and wrist flexors of this side, no evident response was got in the long flexors of the fingers, and a like state of matters was obtained with the galvanic current. In short, all the muscles, except the long flexors of the fingers, gave responses normal both in series and in form." The examination was made under chloroform. The tendons at the wrist were now relieved from the adhesions which they

had contracted, and the exploration again undertaken, but with no other result than before.

The patient having left this part of the country, I had no opportunity of seeing the ultimate result of the treatment, but I fear that little improvement was possible beyond what has already been noted.

Remarks.—I have no doubt that the cause of the contracture was pressure-ischæmia, and that the lesion of the muscle extended far beyond the seat of the fracture. The ulceration of the skin was doubtless caused by splint-pressure, but it was not in close proximity to the flexor bellies, and, therefore, this case does not support Davies-Colley's theory of the spread of inflammation from the skin to the deeper parts beneath. One notes also the absence of two features mentioned by some observers, viz., tender scars, and thickening felt in the flexor bellies.

In my former paper¹ the advisability of a linear skin-incision was hinted at. The flap method was selected on account of the wider field of operation explored by it, but in view of the results it is a pity that the linear method was not adopted.

CASE III.—Woman, aged 32. Septic process in right fore-arm seventeen years ago; multiple incisions; splints worn for two weeks; typical contracture; function good; no operative treatment advised.

This patient illustrates the ultimate results in a case where no treatment was directed to remedy the deformity.

Maggie M., aged 32, housemaid in Miss M'Alpin's "Home," consulted me early this year on account of "sprain of right thumb."

History.—She thinks that she injured the thumb in some way in the performance of her duties, but she gives no clear account of herself. Examination of the part showed nothing to point to recent injury. There was, however, a well-marked contracture of flexors. This she stated was of old-standing, and she related the following:—When aged 15, she had "poisoning" or disease in lower end of the radius. This was operated on, and splints, front and back, were applied to the fore-arm, and were kept on for a fortnight. The doctor in attendance told patient's mother that he had unavoidably damaged the "leaders of the thumb" at the operation.

Examination.—The right hand and wrist present characters

¹ *Loc. cit.*

typical of Volkmann's contracture. The lower third of the fore-arm is the seat of numerous scars. The largest and most marked of these is over the back of the radius, covering the lower fourth of the bone, about 3 inches long, and adherent to the bone. It lies between the tendons of the extensors of the first and second internodes of the thumb. Another is situated in front of lower end of the bone, and the pulsations of the radial artery are plainly visible under it. Another scar (linear) is found on the flexor aspect of the fore-arm, about 2 inches below the bend of the elbow. It is somewhat depressed, is in the middle line between the two muscle groups, and is perhaps adherent to the pronator teres muscle.

There is great prominence dorsally of the carpus, especially at the ulnar border, and this somewhat obscures the lower end of the ulna for measuring purposes. Movements of the various articulations are good, but the deformity is marked, straightening of the fingers being accomplished only in flexed position of the wrist. The flexor profundus is not much affected; the sublimis, however, is markedly shortened, as also the flexor longus pollicis. The fingers present no trophic changes. The following is the table of measurements:—

	RIGHT.	LEFT.
Length of fore-arm, from olecranon to ulnar styloid,	23.5 cm.	24.5 cm.
Greatest circumference over muscle-mass,	21.25	24.0
Increase on flexing fingers and wrist,	1.0	1.0
With hand in long axis of fore-arm,		
Angle of flexion of fingers (second phalanges),	90°	...
With fingers extended, wrist angle with fore-arm, nearly	90°	...

Dr. Love's Report (19th February, 1903).—"All the muscles of the affected arm, excepting those of the thenar eminence, give normal electrical responses. Those of the thumb are wasted, and the thumb strongly flexed on the palm, and in them no faradic responses are obtainable. They respond to galvanism—K.C.C.>A.C.C.—but there is a quantitative diminution."

Remarks.—In all probability we must look to splint-pressure as the cause of the contracture, although the presence of the scar below the elbow suggests the possibility of myositis extending from contiguous septic inflammatory process.

The excellent functional condition of the hand precludes the serious consideration of operative treatment; at the same time it is most instructive as an aid to the founding of a prognosis in this contracture, more especially as in this case there had not been apparently any treatment whatsoever.

In conclusion, I have to express my thanks to Drs. John Love, J. Stoddart Barr, and W. Archibald for much kindly help.

EXPLANATION OF THE PLATE.

The upper figure shows the position of the fingers when the hand is in long axis of the fore-arm; the scar on the flexor surface is also shown. The lower figure shows in profile the flexion of the wrist which accompanies extension of the fingers.

AUTHOR'S CASES.

CASE.	SEX.	AGE.	NATURE OF ACCIDENT.	TREATMENT.	OPERATION AND RESULT.	REMARKS.
I.	F.	4	Backward dislocation of right elbow.	Poroplastic splint for three weeks; passive movement daily.	Tendon-lengthening nearly three months later. Result, excellent.	There had been considerable effusion in front of elbow, at first thought to be rupture of brachial artery; later, swelling seemed to be in flexor muscles.
II.	F.	7	Fracture of left fore-arm between middle and lower thirds	Anterior and posterior splints for six weeks.	Tendon-lengthening nearly three months later. Result, slight improvement.	Swelling of hand and fingers, with blisters. Pressure sores front and back of fore-arm, lower half. Degeneration of muscle at seat of fracture.
III.	F.	32	Septic process in right fore-arm seventeen years previously.	Multiple incisions; anterior and posterior splints for fourteen days.	..	Deformity marked, but function good.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1902-1903.

MEETING IV.—12TH JANUARY, 1903.

The President, MR. A. E. MAYLARD, in the Chair.

I.—CHILD OPERATED ON FOR INTUSSUSCEPTION AT THE AGE OF 3 MONTHS.

BY DR. H. RUTHERFURD.

William M., aged 3 months, was admitted to the Royal Hospital for Sick Children on 16th November last, having been ill for nearly forty-eight hours. He was quite well until the night of 14th November, when he wakened screaming, and immediately vomited. Thereafter he rested only for short intervals, vomiting persisted, straining was more noticed, and on the following afternoon (15th November) blood and mucus was passed *per anum*.

Condition on admission.—The patient is a stout, healthy-looking infant; face somewhat sunken; temperature, 99·8° (rectal); pulse, 120, regular and of good tension. The abdominal wall is lax, and from a little below the left costal margin down into the left iliac region an elongated tumour mass is easily palpable. *Per rectum* the apex of an intussusception can be felt about an inch and a half from the anus.

16th November (6 P.M.)—The abdomen was opened for about 3 inches immediately to the left of the umbilicus, and with some difficulty the long intussusception was reduced. The apex of the intussusception was formed by the ileo-cæcal valve.

The temperature rose on the night of operation to 105·2°, and gradually came down to normal in the course of the following week. For a fortnight there was rather persistent diarrhœa; milk, at least, was not digested, and the child had to be kept on wine, whey, barley water, and raw white of egg.

II.—CASE OF SCARS AND DEFORMITIES DUE TO INTRA-UTERINE SMALL-POX.

By DR. H. RUTHERFURD.

The child, Rachel G., aged 7 months, was brought to the dispensary of the Children's Hospital chiefly on account of a deformity of the left foot. On examination, this is found to be of the nature of talipes calcaneo-valgus. There are no ascertainable defects of the leg bones, or even of the tarsal bones, but the tarsus is concave on the dorsum.

There is a defective condition of the metacarpal bone and phalanges of the left thumb; the thenar eminence is represented by scar tissue.

The child shows, further, a pitting of the skin on the sole of the left foot, and three superficial marks, suggestive of vaccination marks, each about the size of a threepenny piece, on the left fore-arm, and another over the second cartilage on the right side.

By the kindness of Dr. R. S. Thomson, to whom I showed the case, I have been able to verify the mother's account of her illness. She is a healthy-looking young woman of 23, with a face pock-marked all over. She was admitted to the small-pox hospital, Belvidere, on 5th December, 1901, with a rash two days old, which is said to have run a full course and been confluent on the face. She was said to be about three months pregnant. There was no complication, and she was dismissed well on 25th January, 1902. Her child was born on 19th May.

III.—MICROSCOPIC AND LANTERN DEMONSTRATION OF CHORION-EPITHELIOMA (DECIDUOMA MALIGNUM) AND OF CHORION-EPITHELIOMA-LIKE AND HYDATIDIFORM MOLE-LIKE STRUCTURES IN TERATOMA OF THE TESTIS.

By DR. JOHN H. TEACHER.

Chorion-epithelioma or deciduoma malignum is now a fairly well-known tumour. It has been the subject of several demonstrations in Glasgow, but tumours of the testis containing structures histologically identical with it have not been shown here before. It was to demonstrate tumours of this description that the exhibition of preparations and lantern slides was undertaken, the chorion-epithelioma being introduced for the purpose of comparison only.

Dr. Teacher briefly reviewed the views at present held about the nature and origin of chorion-epithelioma (*deciduoma malignum*), and described the microscopic appearances of it. The view which is now generally accepted is that of Marchand, that it is a tumour originating from the epithelium of the chorionic villi, and, therefore, necessarily connected with a preceding pregnancy. On the other hand, there are (1) the view of Veit that it is sarcoma of the body of the uterus to which special characters have been given by the association of a pregnancy, the sarcoma being the primary condition, and the pregnancy and the presence of placental structures accidental; and (2) the view which was adopted by the London Obstetrical Society in 1896, that it was simply sarcoma of the body of the uterus in which some of the cells had a syncytial character resembling that of the outer layer of the chorionic epithelium, but that it had nothing whatever to do with pregnancy.

In coming to their decision, the members of the London Obstetrical Society were in no small degree influenced by the demonstration by Dr. T. W. Eden and the late Professor Kanthack of preparations from a "sarcoma of the testis," in which structures identical with the deciduomata under discussion were present. Of this so-called sarcoma no further account was published, and no other tumour resembling it was reported until April, 1902, when two cases were reported by Schlagenhauser, of Vienna. In August following four more were reported by Wlassov, of Moscow. Both these observers quite independently came to the conclusion that the primary growths of the testis were teratomata. By a teratoma is meant a mixed tumour, in which there are tissues representing all the three layers of the embryo. The theory of origin of teratomata which has found most general acceptance is that they are either inclusions—actually included twins—or that they have developed from some cell or cells which have the morphological value of a fertilised ovum lying within the body of their bearer, in which case, also, they represent the imperfectly developed rudiments of a monstrous foetus. The grounds of this view are somewhat theoretical, but at any rate this much is certain, that all intermediate forms have been traced from an actual included twin, through the sacral teratomata and complicated dermoids (of the ovary especially), in which such highly differentiated structures as teeth, portions of nervous system, coils of intestine, limbs, &c., are found, to those mixed tumours containing the essential elements of divers

tissues but no formed organs. One objection which has always been raised to classing the mixed tumours along with the more complex teratomata is that no trace of foetal membranes has been found in them. The discovery of Schlagenhauser, if his interpretation of it be accepted, meets this objection, and it is a most important contribution to the theoretical explanation of the nature of teratoma. He regards the chorion-epithelioma-like tissue as actually representative of the chorionic epithelium or trophoblast of a monstrous ovum.

The first case was that of a man, *æt.* 43. No account of his illness could be obtained from him; the diagnosis was left-sided pleurisy and pneumonia, possibly infarction of the lungs. The *post-mortem* examination revealed a tumour of the testis, supposed to be sarcoma, with metastases in the left lung, thyroid gland, and right kidney. The primary tumour contained many different tissues, glandular and of the connective tissue group, and a structure composed of clear, well-defined epithelial cells resembling the cells of Langhans' layer of the chorionic epithelium, combined with irregular multinucleated masses of opaque protoplasm corresponding to the chorionic syncytium. The modifications of this tissue which are seen in early placentæ and in tumours were all faithfully reproduced, as well as the tendency to hæmorrhage, degeneration, and necrosis of the tumour cells, dissemination through the blood-vessels, and the destructive action on the blood-vessels of the invaded tissues so characteristic of chorion-epithelioma. The secondary tumours were histologically pure chorion-epithelioma.

The second case had been published twenty years before, by Breus, as a peculiar malignant myxoma of the testis. It was an extremely malignant growth, and the case terminated fatally in ten weeks. The tumour of the testis was about the size of a fist, and consisted of a firm fibrous meshwork enclosing cysts. From the upper end of this stretched the thickened spermatic cord, the dilated veins of which were filled with long strings of tumour, which extended right up the vena cava into the right cavities of the heart and through the foramen ovale into the left auricle and ventricle. The growths floated free in the veins, and resembled nothing so much as the vegetations of a hydatidiform mole. Microscopically, the primary tumour was a mixed tumour; the intravascular growths, although spoilt through lying so long in weak spirit, show a close resemblance to hydatidiform mole. There were secondary tumours in the lungs which presented the structure of chorion-epithelioma.

At the *Versammlung für Naturforscher und Aerzte* at Carlsbad, in September, a case similar to the first was demonstrated by Schmorl, and others of like nature were referred to by Bostroem and Marchand. Schlagenhauser's theory as to their nature received general acceptance.

The specimens of teratoma shown by Dr. Teacher were given to him by Dr. Schlagenhauser (both cases) and by Dr. Schmorl and Professor Marchand; the chorion-epitheliomata were cases of Drs. Kelly, Edgar, and Munro Kerr.

The cases described by Wlassov, Dr. Teacher had not seen. The description of them is similar to that of Schlagenhauser, but the interpretation of them is different, inasmuch as their author traces the chorion-epithelioma-like structures to embryonic gland tubules. A case very similar to Schlagenhauser's second has been described by MacCallum as lymph-endothelium of the testis, with intravascular growths resembling hydatidiform mole; lantern slides of the illustrations of this case were shown.

The subject is very new, and requires further investigation. Of the suggestions as to the nature of the peculiar tissues in these tumours, Dr. Teacher considers that of the discoverer the most satisfactory. Chorion-epithelioma and its physiological prototype, the trophoblast or primitive chorionic epithelium, are extremely characteristic structures. True imitation of them by proliferation of glandular epithelium or endothelium has not been observed.

The other teratoma theory, that of Wlassov, is not less open to criticism than that of Schlagenhauser. The exactness of the mimicry suggests more than a mere accidental resemblance to chorion-epithelioma; it suggests a common origin. Whatever may be the interpretation finally accepted, the position of chorion-epithelioma can hardly be affected; the actual tracing of it to the villi themselves, which has now been done by numerous observers, cannot be explained away, and must stand as the final test of its nature and origin.

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IV.—A SPECIMEN OF ANEURYSM OF THE AORTA IN WHICH
DEATH OCCURRED FROM RUPTURE OF THE HEART.

By DR. JAS. KERR LOVE AND DR. J. W. LEITCH.

This specimen, on further examination, was found not to bear out the interpretation given, and the communication was withdrawn.

V.—CASE OF SARCOMA OF THE BODY OF THE UTERUS AND RIGHT
OVARY AND ADENO-CYSTOMA OF THE LEFT OVARY.

By DR. J. K. KELLY.

Mrs. J., æt. 66, was admitted to the Royal Infirmary on 7th October, 1902, complaining of recurring hæmorrhage and reddish-brown discharge from the vagina, and pain of a dull, gnawing character in the lower part of the abdomen. The illness began about the beginning of May, 1902, with a sudden and rather profuse bleeding "from the womb." She lay in bed for a week, and the bleeding lessened and almost ceased. On going about again, however, it recurred, and has continued more or less ever since. It had no bad odour at any time. Her general health had continued fairly good. She had been in the Western Infirmary several times (under the care of Sir William T. Gairdner) on account of supposed aneurysm of the abdominal aorta.

Present condition.—Patient appears to be in fair health. Examination of the abdomen reveals marked pulsation of the aorta in the lower part of the abdomen, and the vessel can be felt to be considerably dilated. The uterus is enlarged and dense. There is no disease of the cervix. To the left side of the pelvis is a dense mass which is regarded as enlarged hypogastric lymphatic glands. The left ovary is considerably enlarged (it was cystic). The right ovary is also somewhat enlarged. The uterus and ovaries were extirpated by the abdominal route on 15th October, 1902. Patient was dismissed on 31st October, well.

On opening the uterus an area was found in the upper part of the posterior wall presenting a villous appearance. This proved to be a spindle-celled sarcoma replacing the mucous membrane, and extending some distance into the muscular wall. The right ovary was slightly enlarged and transformed into a mass of yellowish-white nodules, which were sarcomata of the same nature as the uterine tumour.

VI.—EXHIBITS.

By DR. R. S. THOMSON and DR. ROBT. FULLARTON.—(1) A series of water-colour drawings illustrative of the prodromal rashes of variola, &c. (2) A series of photographs illustrating various phases of the variolar eruption.

By DR. JOHN BROWNEE.—A microscopical demonstration illustrating certain features of the variolar eruption.

By DR. T. K. MONRO.—A water-colour drawing by Dr. A. J. Ballantyne representing severe scrofuloderma.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1902-1903.

MEETING IV.—28TH JANUARY, 1903.

The President, DR. J. NIGEL STARK, in the Chair.

I.—SPECIMENS.

(A) BY DR. E. A. GIBSON.

1. Tubal pregnancy with cystoma of same ovary.

2. *Uterus septus with multiple myomata*.—This specimen (see illustration) was removed from an unmarried patient, æt. 42. I saw her with Dr. Alexander in December last. The history was that until two years ago her menstruation had been normal, but that since that time she had suffered from menorrhagia, and for the last six or seven months from difficulty of micturition. A few days before I saw her she had been unable to pass urine, and the catheter had to be used. She had been aware herself of a lump in her left inguinal region for some months. There had been no difficulty with the bowels. On abdominal palpation a tumour was felt, which reached to between the pubes and umbilicus, and which had a knob on the left side. *Per vaginam*, this tumour was felt to be continuous with the uterus and to be fixed in the pelvis, and to extend chiefly to the left.

She was removed to a nursing home, where she developed a phlebitis of the left leg, the veins of which were very

varicose. After this had subsided, we operated on 16th January. The tumour had developed between the layers of the broad ligament on the left side, and before it could be got out of the pelvis I had to split the ligament. There was also some difficulty with the pelvic veins on the left side, which were very dilated. I did a supravaginal amputation, and treated the stump retroperitoneally.

The specimen is a typical example of the uterus septus, in



which the septum extends throughout the entire length of the body of uterus and cervix, ending at external os, and producing two uterine cavities with a well-marked division. Each cavity leads upwards to the right and left uterine cornu.

The other feature of the specimens is an enlargement from multiple fibroids. A large fibroid occupies the posterior wall; a smaller ($2\frac{1}{2}$ inches in diameter) is situated in the left upper margin; while another (of still smaller size) is situated at a

similar place on the opposite side. Size of entire specimen, 7 inches by $5\frac{1}{2}$ inches by 4 inches.

The Fallopian tube and ovary present normal appearances, and the right appendages were left at the operation to avoid an acute menopause.

(B) BY DR. J. M. MUNRO KERR.

1. *Unusually large placenta.*—This placenta, which I show, was removed from a patient whom I saw with her doctor some two months ago. I was asked to see the patient because he found that during parturition, although the two limbs were born, the remainder of the child could not be extracted. On examining the patient, I found the abdomen unusually distended, for there was a large elastic swelling above the symphysis and extending up to the umbilicus, while above that there was a firmer swelling. Being convinced that the cause of the difficulty was ascites of the child, I punctured the foetal abdomen and evacuated a very large quantity of fluid. The child then collapsed, and was readily extracted. It was dead and uncerated. The placenta was then removed, and proved to be unusually large.

2. *Multilocular cyst of ovary with extensive adhesions removed by abdominal section.*—This tumour, which I show you, was removed by me three weeks ago from a patient of Dr. Richards, of Prestwick.

The tumour was first noticed three months before. Menstruation had always been regular.

She has had ten of a family, the last child having been born about a year ago.

On abdominal examination, a fluctuant swelling could be readily felt occupying the middle line of the abdomen and extending from the symphysis to well up above the umbilicus.

The tumour did not move freely. On bimanual examination, it was found to extend into the pouch of Douglas, and to displace the uterus forwards and upwards.

The tumour was diagnosed by Dr. Richards and myself as an ovarian cystoma.

Abdominal section was performed in St. Elizabeth's Nursing Home, and with the very greatest difficulty the tumour was removed. It was absolutely adherent over its whole surface, and, indeed, once or twice I thought I would require to desist and leave a portion behind. However, I finally removed the whole growth, which you see.

The growth consists of one large cyst and many smaller cysts, and involves the appendages on both sides. So firmly adherent was it to the posterior surface of the uterus that I feared at first I would require to remove that organ.

The patient, I am glad to say, has made an excellent recovery. The stitches were removed a few days ago, when the wound was found completely healed.

(C) BY DR. SCOTT M'GREGOR.

Uterus removed by vaginal hysterectomy for carcinoma.

II.—SOME QUESTIONS BEARING ON INFANT FEEDING DEALT WITH IN THE LIGHT OF RECENT OBSERVATIONS.

BY DR. CARSTAIRS DOUGLAS.

Dr. Douglas's paper will be found as an original article in our issue for May, 1903, at p. 330.

Dr. Jardine considered that we had not got to the stage of giving up the sterilisation of milk. It was still necessary, as other diseases besides tuberculosis might be conveyed by milk, *e.g.*, typhoid and scarlet fevers. He preferred cow's milk to which cream and lactose were added. It was very important that a child should be fed at proper intervals, and with a correct quantity of milk. He had obtained satisfactory results from the use of Horlick's malted milk.

Dr. Borland was of the opinion that milk should neither be sterilised nor boiled, as if these were done much was lost in the milk. Something was destroyed by boiling that rendered the milk detrimental to growth and development. Much could be done by proper and regular feeding.

Dr. Munro Kerr thought the artificial feeding of infants was haphazard. He tried milk, at first strong, and made it weaker if required. If indigestion arose, he gave Horlick's milk for a day or two. If trouble arose in a breast-fed child, it might be due to too frequent feeding. In one case, where the child had indigestion with green stools, the mother's milk was found to have too much proteid, and great benefit resulted from giving the child barley water before each meal.

Dr. Nigel Stark tried Budin's method of giving pure sterilised milk, but it caused great trouble with some children. Where artificial foods did not do well, he added raw meat juice.

Dr. Douglas replied, and stated that the sterilisation of milk at 160° F. (70° C.) did no harm to the antiscorbutic

properties. It was the absence of something vital that did harm in artificial foods, and hence the value of giving raw meat juice.

III.—DEMONSTRATION OF LARGE ADENOMATOUS POLYPUS WITH SECTIONS ILLUSTRATING ITS STRUCTURE: SECTIONS OF OTHER TYPES OF POLYPI.

BY DR. ALEX. MACLENNAN.

Under the microscopes are placed a number of sections to show some types of uterine or cervical polypi; unfortunately, I have not an example of either a pure fibroma or of pure adenoma.

Among the specimens are a few sections of a large cervical adenomatous polypus. The history of the case was typical, and indicated that the tumour had originally been intra-uterine. The polypus was removed with the ecraseur from the anterior lip of the cervix by Professor Murdoch Cameron, and I am indebted to him for permission to demonstrate the tumour.

Large adenomatous polypi are uncommon, and, as certain adenomatous uterine tumours are interesting on account of their probable origin from the duct of Wolff, any examples of this nature are worthy of investigation.

The macroscopic appearances of the tumour were strikingly like those of a multilocular ovarian cyst, and the microscopic structure simulated very much that of a pseudomyxomatous ovarian cystoma.

The tumour, formerly as large as two fists, has, during hardening, shrunk to about half its size. It was composed of numerous cavities which contained a clear mucus, and which in many cases communicated with each other. These cavities varied in size from a small orange to minute glandular spaces. There was more mucus than stroma about the tumour, and in parts it showed signs of degeneration. (On section also certain areas did not take up the stain.) On microscopic examination, the tumour was found to be composed of a number of glands, dilated in many places into cysts, and lined with columnar epithelium. Most of the stroma is formed of fibrous tissue, but some of the sections taken from the region of the pedicle showed that muscle fibres were present.

The structure of the tumour is such that there can be no doubt that it has originated from the uterus and not from

remains of the Wolffian ducts. I sent a couple of paraffin blocks to Dr. Ludwig Pick, Berlin, for his opinion; he kindly examined both, and stated that the tumour was evidently an ordinary fibro-adenoma. The peculiarities are, as already remarked, its size and its naked eye appearance.

The tumour does not belong to the interesting type of tumours which arise from remains of the Wolffian body or duct. Embryologically, this tumour originates from the ducts of Müller.

Among the other sections is one of a myomatous polypus, which shows a very large number of "Mastzellen." The origin of these cells is interesting; they are usually considered to arise from the connective tissue cells, but in places the differentiation between these cells and the muscle cells is not marked, and it seems as if the muscle cells were in places passing into "Mastzellen." They have no special significance.

The other sections speak for themselves.

Dr. Kelly considered that the polypus was cervical in origin, and wished to know the nature of the cyst contents.

Dr. Balfour Marshall referred to a case of cervical polypus presenting an unusual history. He saw the patient six days ago. She was 45, and had seven children, the last born nine years ago. Her menses were regular till June last, when they suddenly ceased. She took a flooding ten weeks ago, and had been bleeding ever since. She had no other symptoms, and was free from pain. From the history, malignancy was suspected, but examination showed a fibroid polypus dilating and protruding from the cervix. It was attached by a broad pedicle to the right side in the upper part of the cervical canal. The bleeding was, however, evidently associated with a mucous polypus, which arose from the opposite wall of the cervical canal, and protruded sufficiently to be both felt and seen. The fibrous polypus was small walnut sized, the mucous polypus haricot bean size. Both were easily removed, after which bleeding ceased.

Dr. MacLennan, in reply, stated that it was his opinion that the tumour was of uterine origin, though the structure of the glands did not militate against a cervical origin. The contents of the cysts were non-coagulable with heat, but a certain amount of coagulation had taken place during hardening in alcohol. He would have liked to have heard of any adeno-myomata arising from the Wolffian body or duct.

IV.—NOTES OF A CASE OF INOPERABLE CARCINOMA OF THE PREGNANT UTERUS IN WHICH THE PORRO-CÆSAREAN OPERATION WAS SUCCESSFULLY PERFORMED.

By DR. J. M. MUNRO KERR.

Dr. Munro Kerr's paper will be found as an original article in our issue for May, 1903, at p. 328.

V.—CASE OF ADVANCED CANCER OF THE RECTUM COMPLICATING PREGNANCY IN THE SIXTH MONTH FOR WHICH HYSTERECTOMY WAS SUCCESSFULLY PERFORMED.

By DR. A. W. RUSSELL.

This specimen of a pregnant uterus was removed from a patient, aged 27, who was the subject of rectal cancer, which it was feared was too far advanced for radical treatment. It has this additional interest, that it shows a breech presentation with the os nearly fully dilated, the expulsion of the child continuing for some time after removal of the uterus from the patient, and necessitating the use of a string to prevent completion of the birth.

Apart from the interesting and serious problem that this complication of pregnancy set for us as to the proper line of treatment, its comparative infrequency of occurrence is sufficient reason for bringing it before the Society, and so placing it on record.

Dr. J. A. Tolmie, who asked me to see the patient in consultation at the end of last October, has kindly supplied the following note of the case:—

"While treating Mrs. F. for vomiting of pregnancy, she called my attention to the fact of a little blood being passed in the act of defæcation, accompanied by slight pain. Examination *per rectum* revealed a constriction about $2\frac{1}{2}$ inches from the anus, of the nature of a band of tissue almost surrounding the circumference of the bowel. Enules of hazeline for the time being improved matters, in that pain was relieved and the bloody discharge abated. This observation and treatment occurred about the middle of June. I did not see the patient again till about the end of August, and then I was called in specially to treat, if possible, the pain on defæcation and the discharge of bloody 'matter' which was passed at stool. Examination revealed very little change in the condition of the parts, save that the lumen of the canal

was certainly narrower, and, on enquiring, I found the form of the motion was more or less tape-like. The idea of the constricting ring being malignant was certainly entertained, but probably too readily dismissed—temporarily, at least—in the expectation of the patient producing a living child, seeing that there had been two prior successive abortions at or about the third month, while the pregnancy prior to these was complicated by eclampsia and forcible delivery of the foetus at the sixth month. Palliative remedies were used *per rectum*—suppositories of morphia with bisnuth being the chief. During the month of September I was absent, but a *locum tenens* found great difficulty in treating a constipation which arose. Heroic doses of laxatives had to be given before any effect was noted. At the end of September, when I again saw her, her condition was pitiable. Constipation, very severe pain on defæcation, passage of blood and pus *per anum*, emaciation, violent vomiting at times—such is the picture. Rectal examination revealed now a fungating mass in the position of the constricting band of tissue, and produced intense pain. At this stage Dr. Russell saw her in consultation with me.”

At the consultation, the patient was noted as being very thin and having lost flesh. She had the worn, anxious expression suggestive of long continued severe pain. She was examined under chloroform. The anus admitted the forefinger only with difficulty, and the lower rectal wall was surrounded by a dense cancerous mass for about 2 inches upwards. Just beyond this, one or two isolated enlarged glands could be felt by the finger. Though the condition was certainly advanced, radical treatment seemed still to be possible, and she was accordingly admitted into the Samaritan Hospital, where, after examination under an anæsthetic and a consultation with several members of the staff, it was decided that the malignant disease was too far advanced, and that hysterectomy was not advisable. As I had already discussed with Mr. R. H. Parry the question of some such operation as Kraske's for removal of the diseased rectum, and the alternative plan of abdominal hysterectomy and a colotomy for the patient's relief, the latter of which Mr. Parry, on seeing the patient, favoured, she was transferred to the Victoria Infirmary on 15th November, and, two days later, Mr. Parry, after a final vaginal examination, ruptured the membranes, which were protruding from the relaxed cervix. He then did an abdominal hysterectomy, and, after removing the uterus, he did a left inguinal colostomy. The patient

made a good recovery, and within a fortnight had so little pain that the customary dose of morphia was given up.

Dr. Tolmie's note as to her present condition (at date of this meeting) may be quoted here:—

Present state.—Patient is putting on flesh rapidly, enjoying food (ordinary diet), manages to stay out of bed most of the day, and assists with ordinary housework. But, in the rectum, there is now a large excrescence pressing against the posterior wall of the vagina, and from the anus there is a sanious discharge with a very offensive odour. The vagina is invaded, and, during the past few days, there have arisen symptoms which would point to invasion of the bladder. Pain is reduced to a minimum, and what pain there is is relieved by 15 minims of liq. morph. hyd. (*B.P.*). The condition of the patient is quite satisfactory.”

Remarks.—I am glad that Mr. Parry is here to give his own impression of the case. For myself, I am satisfied that the course taken has been justified by the experience of the patient in her temporary improvement in general health, and especially in her relief from the fearful pain that she previously suffered owing to the rectal obstruction. The invasion of the vagino-rectal septum, and even the vagina itself, made the induction of premature labour a very dangerous procedure; and the condition of the uterus, with membranes bulging through the cervix, indicated the probability of spontaneous premature labour, with inevitable laceration of the tissues about the cancerous mass, while to delay until the child was viable to allow of Cæsarean section—apart altogether from the poor chance of continued healthy existence of a child born under such conditions—was contraindicated by the serious condition of the mother, and the relaxed condition of the cervix suggestive of premature expulsion of the uterine contents.

GLASGOW NORTHERN MEDICAL SOCIETY.

THE Society held its usual monthly meeting on 7th April in the Ophthalmic Institution, Glasgow—the President, Dr. J. S. Muir, in the chair.

DR. A. MAITLAND RAMSAY, with the assistance of his staff, gave a series of demonstrations, with special reference to diseased and injured conditions of the eye. As there were

several patients present by arrangement, these were shown first, and their conditions explained.

The first class of cases referred to an operation for ptosis. The operation which had been performed was a modification of that by Mules. The advantage of it was that if it were not successful it could easily be done again, and it left very little scar, if any. The upper lid is suspended on a loop of wire which remains permanently in the tissues.

The next class of cases calling for attention consisted of three patients where a paraffin stump had been supplied after enucleation. The great difficulty with the artificial eye is the sunken, flat, and dead-like appearance of it. The operation described went a good way to overcome this drawback. When liquid paraffin is injected into the capsule of Tenon, the artificial globe in front can move about, and it is very difficult to detect that it is artificial.

Another class of considerable psychological interest was demonstrated where sight had been given after many years of more or less total blindness. In one case a dark dislocated lens had been found blocking up the pupil and was removed, after which the patient had good vision. A man, aged 30, was present who had been born blind. A cataract had been found in each eye. Both lenses were removed. The man sees very well, and can tell the time on a watch. It is intended that his sister will now be operated upon as well, as she is also blind.

Several preparations, including cultures and microscopic slides, were shown, demonstrating the bacteriology of the conjunctiva, and arranged by Dr. J. C. M'Clure, bacteriologist of the institution.

The gentlemen then inspected the electric room, where Dr. John Gilchrist explained the various apparatus, including *x-ray* appliances.

Dr. Ramsay afterwards delivered a lecture on "Iritis" in the class room. The clinical features were illustrated by hand-painted coloured slides, while the pathological aspect was clearly demonstrated by means of microscopic specimens thrown on the screen by the projection microscope. It was thus possible to have two pictures shown at once.

The usual votes of thanks were accorded the lecturer and the directors of the institution.

REVIEWS.

Ligaments: Their Nature and Morphology. By J. BLAND-SUTTON. London: H. K. Lewis. 1902.

WE have received, with pleasure, a copy of Dr. Bland-Sutton's little book on ligaments, in its third edition. It would, indeed, be a pity if such a book were allowed to go out of print. It is spiritedly written, like everything else by the same author, and shows an intimate knowledge at first hand of certain branches of a very special subject. If anything were needed, at this time of day, to emphasise the close relationship of human to general vertebrate anatomy, it might be found in this study of the homologies of a set of structures which have been too often neglected by morphologists.

Dr. Sutton's main thesis is that the more important ligaments of the body are derived from the metamorphosis and regression of muscles, while others are due to the degeneration of osseous and cartilaginous tissue. This thesis is illustrated by a large number of examples in which tendons, ligaments and aponeuroses in the human subject are represented in other vertebrates by muscular, cartilaginous, or osseous tissue. It is more than probable, however, that too much is made by Dr. Sutton of this line of argument. Ligament and aponeuroses consist, in a very definite developmental sense, of tissue which is less specialised than muscle or even bone. To assume that all the structures cited by Dr. Sutton were primitively muscular would increase enormously the number and extent of the mammalian archetypal muscles, or rather it would create arbitrarily a very complex archetype. We believe that in a number of the cases cited by Dr. Sutton it is impossible to say whether the muscular or the fibrous condition should be considered the more primitive, while in others it is most probable that the latter alternative is the true one. But as the derivation of each structure can be properly discussed only by carefully considering its own particular comparative anatomy and development, it would go beyond the limit of a short review to pursue this argument further.

In speaking of the walls of the body cavity, Dr. Sutton makes the suggestion that the diaphragm is derived from an upper or thoracic portion of the transversalis muscle, and that the ligamenta arcuata are tendinous intersections.

The only evidence which he adduces from comparative anatomy is the occurrence in lizards of a thoracic transversalis muscle. No mention is made of the innervation of the diaphragm itself. This is certainly an extreme instance, but it illustrates the unsatisfactory side of Dr. Sutton's book, which, too often, throws a flash into a corner or two of the subject he happens to be dealing with, leaving the rest of it in obscurity.

The great merit of the work remains, however, in its acute recognition and vivid presentation of structural correspondence, very many of which were worked out for the first time by the author himself.

Muco-Membranous Entero-Colitis: Symptoms, Complications, Etiology, and Treatment. By MAURICE DE LANGENHAGEN, M.D. London: J. & A. Churchill. 1903.

THIS little volume by Dr. Langenhagen, of Plombières, in the Vosges, is an elaborate account of mucous colic or tubular diarrhœa, based on a series of more than 1,200 cases which have come under the personal observation of the author. The relations of this disease to other morbid conditions are, we are satisfied, not nearly so well known as they ought to be; we may mention, for instance, the association with enteroptosis and with intestinal sand. A perusal of this essay may be recommended as likely to prove highly instructive to most medical practitioners.

The Errors of Accommodation and Refraction of the Eye and their Treatment, By ERNEST CLARKE. London: Baillière, Tindall & Cox. 1903.

WE regret to have to say that this is a deplorable book; it is quite the worst, both in matter and in form, that we ever remember to have read, and we sincerely trust that it is not to be taken as a sample of the teaching given at the Medical Graduates' College. On looking over the book after perusing it, we find few pages free of pencil markings, but although the field for criticism is thus large, we must confine ourselves to a few of what seem to us the worst errors. In speaking of light in the opening paragraph, the author states—"Light is now considered to be an electro-magnetic phenomenon. It is propagated in straight lines which diverge from any luminous point. The propagation is produced by ether waves which are horizontal—i.e., at right angles to the path of light."

Does the author understand what is meant by the word horizontal? A book on the table is said to be horizontal because its largest surface is in a plane which, if produced, will cut the horizon. It is parallel with the tangent to the earth's surface. If the ether waves are all horizontal, and the path of the light is at right angles to these waves, then the direction in which the light travels at any point must be normal to the earth's tangent.

In the same section we are told that the velocity of light is 186,000 miles per second; but no mention is made of the medium for which this figure is true. It will surprise our readers to learn that almost no notice is taken of the index of refraction; the sole reference which we have been able to find to this important subject is on page 86, where amongst the varieties of hypermetropia we find "*index hyperopia*, due to diminution in the index of refraction of the media." Nowhere in the whole volume is the index of refraction defined, and incredible as it may appear, the sections dealing with lenses and with prisms contain no reference to it. An obvious result of such an omission is to be found on page 15, where the author states that the "aqueous and vitreous are so alike that we may assume them to be one medium." Dr. Ernest Clarke deems it wholly superfluous to mention in what the similarity consists. For anything he says to the contrary, it may be in anatomical structure. As a matter of fact, the index of refraction of the one is very nearly the same as that of the other.

In speaking of aphakia, the author says, "If the patient were myopic originally, a weaker convex glass is required, and if he had a myopia of 12 dioptries he ought to require no glass at all." Such a statement is lamentable. Surely Dr. Clarke must have heard of, if he has not perused, the somewhat recent writings of Landolt. In these the condition of aphakia was thoroughly discussed, and it was shown that before the removal of the lens could give an emmetropic result, the original myopia required to be about 22 dioptries.

Again, on page 213, we are informed that prisms form no images. Does the author not know that a plate of any transparent substance gives an image? Thus, when we look at the bottom of a cup filled with water, we do not see the object but only its image. On page 164 we are told "If the external recti are insufficient, the prism should be placed base outwards." Now, the base of a prism is not a matter of any moment whatever, nor does it of necessity occupy any particular direction; the important thing about a prism is its edge or refracting angle.

But if the matter is objectionable, the manner is quite as bad.

We are told that under certain circumstances a feeling of tension may become "real pain." What is false or unreal pain?

In speaking of the ophthalmoscope, Dr. Clarke first describes the plane mirror, and then says—"If now the mirror is made concave." We know of no process by which a plane mirror can be made concave. Again, we are told that "when the visual axes diverge, R is beyond infinity." We wonder how far that may be.

We may add that all the information which it is thought necessary to give about mirrors, preparatory to the study of the ophthalmoscope, is contained in about one hundred and sixty words.

Medicine is generally accounted one of the learned professions. The appearance of such a book as this in the capital of the British empire, at the beginning of the twentieth century, goes a long way to remove it from that category. On one thing we do congratulate the author, and that is on having succeeded in getting a firm to publish his book.

The Diagnosis of Nervous and Mental Diseases. By HOWELL T. PERSHING, M.Sc., M.D. London: Rebman, Limited. 1901.

"THE object of this book is to facilitate the recognition of nervous and mental diseases by physicians who are not specialists in neurology. It makes no attempt to add to the facts of medicine, but aims simply to set forth a practical method of diagnosis in as convenient and compact a manner as possible." Under such general headings as Hemiplegia, Paraplegia, Facial Paralysis, Ataxia, Tremor, Vertigo, &c., the author has drawn up a series of diagnostic tables of diseases in which these symptoms are the prominent features. Below each symptom these diseases are arranged in divisions and sub-divisions. The division to which the disease belongs is first found by the physician, then the sub-division, and, finally, the disease itself, much in the same way as a botanist identifies a specimen by tracing it to its order, genus, and species.

The author's object is laudably carried out, and the work should be extremely useful to students and practitioners of

medicine, while the hope entertained by the writer—that it will make the fuller knowledge of the best text-books more readily accessible to the busy practitioner—seems to us certain to be fulfilled. A description of the methods of examining cases of nervous disease, and a brief discussion on the principles of localisation, and of the signs of organic disease, hysteria, and neurasthenia, are also included. There is also a large number of well executed diagrams and illustrations which add considerably to the value of the work.

Elements of Pharmacy, Materia Medica, and Therapeutics.

By WILLIAM WHITLA, M.A., M.D. With Woodcuts. Eighth Edition. London: Henry Renshaw. 1903.

THE merits of the new edition of this well-known and highly esteemed work are sure to maintain its earlier reputation. The present issue has been thoroughly revised, and in great part rewritten. Students probably know pretty well already how accurately Dr. Whitla's work meets their requirements; but this book ought to prove of constant value for reference to the physician in practice, and the latter will find that not the least useful part is the account of many non-official remedies whose properties and uses are not easily studied elsewhere. We heartily recommend the volume to our readers.

The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. SCHÄFER, LL.D., F.R.S. Sixth Edition. London: Longmans, Green & Co. 1902.

THIS new edition of Professor Schäfer's well-known handbook requires little in the way of recommendation, the excellent qualities of the work being already widely known; the clear technical instructions, the terse descriptions of sections, and the abundance of excellent illustrations which complete the forty-six "lessons" into which the work is divided, form an invaluable aid to the student of histology.

The results of the most recent researches into the structure of the brain and spinal cord, and of the nervous system generally, are suitably condensed and very well illustrated, the new text and illustrations of these sections forming the most notable addition to the last edition (1898). Although beyond the

scope of ordinary class work, the course and relations of cranial nerve fibres are fully described, with the addition of very useful diagrams of their known and probable connections. Several reproductions of Dogiel's beautiful preparations of nerve-endings (Lesson xxi) are particularly worthy of praise.

On page 332 an inaccurate description of the connection of the inferior corpora quadrigemina has been allowed to remain, the *brachia* from these being described as "eventually joining the optic tract;" the only other point to which exception may be taken is the description of groups of straight tubules passing from the medulla "*through the thickness*" of the cortex (p. 262).

Saunders' Year-book of Medicine and Surgery. General Editor, GEORGE M. GOULD, M.D. Surgery. London: W. B. Saunders & Co. 1902.

IN this volume we have a digest of general surgery, which extends to 360 pages. The remaining 280 are devoted to special subjects—eye, throat, ear, orthopædics, and gynæcology. The compilation is a joint effort by various workers, but, except in a very few instances, the general supervision has been so carefully done as to prevent any overlapping. It is an excellent *résumé* of the preceding year's work in the various departments of surgery.

The Practitioners' Guide. By J. WALTER CARR, M.D. Lond., F.R.C.P.; T. PICKERING PICK, F.R.C.S.; ALBAN H. G. DORAN, F.R.C.S.; and ANDREW DUNCAN, M.D., B.S. Lond., F.R.C.S., M.R.C.P. London: Longmans, Green & Co. 1902.

THE aim the authors had in view, as set forth in the preface, was to produce a dictionary of reference designed to assist the busy practitioner in cases of doubt and difficulty. We think there is a distinct place for such a work, and recognising the difficulty in bringing a vast amount of information into the moderate compass of one volume of convenient size, the authors are to be congratulated on what they have achieved.

The style is clear and concise, and when terms are used which may not as yet be generally known, their equivalents are supplied in brackets. We also note that the plan of arranging systematically symptoms and physical signs, as also different

modes of treatment, has been largely followed throughout. In a book of this kind we look for much attention being paid to the more practical aspects of medicine and surgery, in so far as they bear upon the work of the practitioner, and we are not disappointed in the volume before us. Diseased conditions and surgical affections are, for the most part, here grouped along with the particular part or organ affected, the latter being placed in alphabetical order. The particular ailment or condition frequently also finds a place alphabetically, when the reader is referred to the article in which it is dealt with. A complete index is likewise furnished. The various methods of diagnosis employed in particular conditions, together with the leading points of diagnostic significance, have been assigned due prominence.

In the article on Chicken Pox it is stated that, with the exception of the gangrenous changes in connection with the pock and the sloughing which ensues, "there are no complications." In the light, however, of contributions on the subject of comparatively recent date, we consider that the statement should be modified.

In regard to etiology, the authors have been very successful in presenting in a condensed form the results more particularly of recent investigations.

A special feature of the work is that tropical diseases have been included, and considerable attention devoted to them. This should make it valuable as a book of reference to practitioners residing in tropical countries or travelling in the tropics. The descriptions of these diseases have been brought well up to date.

Much attention has likewise been paid to gynæcological affections, also in describing the modes of procedure in surgical operations which the practitioner may be required to perform.

On these grounds it should commend itself specially to medical men in general practice in more remote parts.

Venereal Diseases, a Manual for Students and Practitioners.
By JAMES R. HAYDEN, M.D. Third Edition. London:
Henry Kimpton. 1902.

THE author "has endeavoured to give, in a clear and compact form, a practical working knowledge of gonorrhœa, stricture, chancroid, and syphilis, together with their complications and sequelæ."

In places there is repetition which may confuse the reader, e.g., treatment of posterior urethritis and its complications. Many of the illustrations are from Tiemann's surgical instrument catalogue, and there are very few representations of diseased conditions.

On the whole, the volume will prove a handy epitome for those who do not possess one of the larger text-books on the subject.

Leitfaden für Unfallgutachten (Guide to the Estimation of Injuries). By DR. CARL WAIBEL. Wiesbaden: J. F. Bergmann. 1902.

THIS book deals with the statutes regarding compensation for injury received in following one's occupation, and with the methods of examining injured people. In the second part, a schema is given of the injuries to various regions of the body, and the effects of such, with indications of their influence on the patient's future capability for work, and also as to suitable compensation.

A translation of this work would be likely to find a ready sale amongst those practitioners who come in contact with cases in connection with the Workmen's Compensation Act.

The International Text-Book of Surgery. Two Volumes. Edited by A. PEARCE GOULD, M.S., F.R.C.S.; and J. COLLINS WARREN, M.D., LL.D. London: W. B. Saunders & Co. 1900.

It is not often that one finds it possible to give such whole-hearted approbation to a work of this character. Text-books of surgery are now so numerous, even modern works, that the issue of a new one may be said to require full justification either for itself as a work, or for its function in the library of students as well as graduates. This one, it may be stated at once, has amply justified itself from both points of view.

As a text-book for students it might be thought, to judge simply from its size, that it was too large to prove acceptable or suitable, but even these two large volumes—together amounting to some 2,000 pages—are, in the opinion of the writer, likely to prove to the student who is anything more than a mere seeker after a degree or a license to practice,

probably the most useful—and certainly the most readable and complete—treatise on surgery that has so far been presented to the profession.

The attempt to compress into the smallest possible compass all the details, even the most essential details, of what one knows as “surgery” in its present-day development, almost always defeats its own purpose, at least in diminished readableness and impaired literary style.

On the other hand, where any particular subject is treated freely and fully, but without padding and circumlocution, the increased space and the greater bulk of the work may quite well be more than compensated for by the added charm and greater lucidity of the result.

That is one—perhaps the most striking—feature of this “text-book.”

The work is, though edited by Gould and Warren, the fruit of the labours of many contributors, British and American, and though it may seem invidious to select from the large list individual names, it may be allowable to mention the following as in themselves ample guarantee for the high standard aimed at—and in our opinion achieved—in its production.

The chapters on “Hyperæmia, Inflammation, Local Infections and its Terminations; Suppuration, Abscess, Ulcer, Sinus, Fistula; Erysipelas, Hospital Gangrene, Tetanus; Operative and Plastic Surgery; Dislocations of the Hip; Surgery of the Breast; Technique of Abdominal Surgery; Acute Intestinal Obstruction; Gonorrhœa,” are all contributed by one of the editors, Dr. Warren. Mr. Pearce Gould contributes the chapter on “Surgery of the Neck.” “Injuries of the Joints, Dislocations,” are treated by Mr. Makins, of St. Thomas’s Hospital, London. “Tumours” are dealt with by Mr. Bland-Sutton, of London. “The Technique of Aseptic Surgery” is ably dealt with by M’Burney, of New York, and, as a matter of course, so also is the “Surgery of the Vermiform Appendix.” Mayo Robson, of Leeds, writes on “The Diagnosis of Abdominal Diseases,” Watson Cheyne, of King’s College, London, is responsible for the chapter on “Diseases of the Bones,” and so on.

From such a collaboration a strikingly successful result is forthcoming in the important and almost altogether satisfactory work now before us.

One of the drawbacks of any such composite production is certainly not altogether absent here, viz., the overlapping which almost inevitably occurs, e.g., “Decubitus Ulcers” are

treated by Dr. Warren in his chapter on "Ulcer," also by Mr. Spencer, of London, in his chapter on Gangrene; "Tuberculous Peritonitis" is dealt with in vol. i by Cameron, of Toronto, in his chapter on "Surgical Tuberculosis," and in vol. ii by Abbe, of New York, in his chapter on "Peritonitis;" "Tuberculosis of the Kidney" is treated by Cameron, of Toronto, and also by Fenger, of Chicago; but it is needless to multiply instances, for after all, such overlapping is bound to happen in any such work, and perhaps the gain more than counterbalances the disadvantage.

If it is permissible to single out any one section of the "text-book" for special praise, the writer would speak in the highest terms of Mr. Watson Cheyne's treatment of "Diseases of Bone." Mr. Cheyne, it is specially interesting to the writer to find, adopts in this chapter a method of systematising his subject which the writer has for several years found very useful in conveying to the student a knowledge—or at least a tolerably clear, working knowledge—of this most difficult part of surgery. As a rule, it will be found that the student of surgery finds most difficulty, and abandons himself most readily to despair, in the endeavour to grasp anything like a clear or workable idea of the "Diseases of Bone," and especially of those diseases, their proximate and remote effects and sequelæ, associated with acute or chronic pyogenic action. Mr. Cheyne's whole chapter is not a long one, and the section on pyogenic disease of bone is brief, but complete and satisfying, in fact, altogether admirable. It may, with the utmost assurance, be commended to the student—it will please the graduate, the general practitioner, and the specialist equally well—as a masterpiece in lucidity and systematic arrangement, two factors which are essential in such a work.

If one would find fault with anything in the "text-book," perhaps the most likely objection that one would be inclined to raise is with reference to the illustrations which are so copiously distributed through the pages. Let us say at once that, as a whole, they are excellent, but there would be little loss were *all the coloured plates* to be omitted. They are, distinctly, not a success; the colouring is unnatural and not even effective, besides they are uncalled for.

Then, though some of the illustrations reproduced from photographs are good, a number are bad; to cite only one instance, on page 531, vol. ii, a plate (Fig. 286) supposed to show "cancer of the penis," might be looked at from one year's end to another, and, without the title subscribed, it could not by any chance be recognised. Surely such a plate could

have been improved on, or else omitted. The chapters on "Military Surgery" and "Naval Surgery" are interesting, but in such a work as this are so condensed as to be incomplete and unsatisfactory. They might, therefore, have been, with advantage, left out.

Regional Anatomy. By RICHARD J. A. BERRY, M.D. Edinburgh: Wm. Green & Sons. 1902.

THIS is a second edition of the author's *Essentials of Regional Anatomy*, and is, "to all intents, a new work." The present issue consists of three volumes—the first, on the upper and lower extremities; the second, on the thorax and abdomen; and the third, on the head and neck. More volumes are promised, dealing with the central nervous system, the joints, and special senses. The completed work will, therefore, be of considerable size. There are no illustrations, but throughout there is free interleaving with blank pages, on which the student is expected to make drawings of his own. This is in pursuance of the plan which Dr. Berry's experience has led him to value highly. The arrangement of the subject-matter is, perhaps, too suggestive of class notes to permit of the book being regarded as a manual, but so clear and exhaustive is the exposition that it may with confidence be recommended as a valuable book of reference for the dissecting-room.

A Handbook of Surface Anatomy and Landmarks. Third Edition. By BERTRAM C. A. WINDLE, F.R.S., Sc.D., M.D., M.A.(Dub.) London: H. K. Lewis. 1902.

THIS little work of 140 pages is so well known that a third edition was inevitable. It is unpretentious in style and unpretentious in its aspirations. It is none the less valuable, and is sure to be as useful to the student of to-day as the earlier editions proved in their time. The illustrations, however, one almost thinks would be as well omitted. They are unsatisfactory and, it must be said, inaccurate. For example, in Fig. 3, the lateral sinus is depicted as passing distinctly too high, and relatively to the tip of mastoid process, reaching by no means far enough down. In the same figure the supra-meatal triangle (properly called the post-supra-meatal triangle, by the way) is inaccurately shown—at least, if the shaded triangle is meant to represent it—for the anterior side of the

triangle should actually touch the posterior wall of external meatus.

Besides, there are many points dealt with in the book that might with as much reason have been illustrated as those few which have been selected (the figures number only 16). The book, illustrations apart, is a most valuable and useful production.

The Phonographic Record of Clinical Teaching and Medical Science.

THIS is the monthly journal issued by the Society of Medical Phonographers. It is written in Pitman's system of phonography, and is easily read. The number before us contains an interesting article on the "Disinfection of the Hands," by Dr. C. W. Cathcart, Edinburgh. To those who use shorthand, and are not members of the Society, we cordially commend this little magazine. The annual subscription—we understand—is only 7s. 6d.

Phonographic Outlines of Medical Terms. With an Appendix. Third Edition. London: Sir I. Pitman & Sons, Limited. 1902.

THIS dictionary of outlines is also issued by the Society of Medical Phonographers, and contains the phonographic outlines (Pitman's system) for about 3,000 of the more common medical terms. The present is the third edition, and contains about 100 new words. Some of the outlines previously in use have been changed.

The Etiology of Typhoid Fever, and its Prevention: being the Milroy Lectures for 1902. By W. H. CORFIELD, M.A., M.D. London: H. K. Lewis. 1902.

NEXT to the preventive measures in the case of phthisis pulmonalis, the prevention of enteric fever is perhaps the most important problem for solution in the domain of preventive medicine. Only by the careful collation of facts and experiments can we hope to make much progress towards this much-to-be-desired end; and Dr. Corfield's lectures provide at least one of the stepping-stones to success in this direction.

The introductory historical chapter is full of interest, and the gradual but sure process of separation, as distinct diseases, of typhus and enteric fever, appears as a triumph of scientific

medicine. In connection with this point, the author's paper "On the alleged spontaneous production of the poison of enteric fever," read in 1874 before the Epidemiological Society, will be found full of almost historical interest, as indicating the deduced presence of specificity in the disease in the form of a definite *materies morbi* present in the discharges from the patient.

Lectures II and III, dealing with the investigations into the various outbreaks of the disease, are most exhaustive, and the chart following page 156 shows, in a very graphic way, the very great diminution in the death-rate from enteric fever in England and Wales within the last thirty years.

The behaviour of the bacillus in soil has been made the subject of the most exhaustive and prolonged experiments, but the results have not been thoroughly brought into line, and their full value is thus not yet obtainable.

It is to be feared that the total eradication of enteric fever from this country is a much more difficult problem than might be considered, and, as far as the results have gone, it does not seem that we may expect anything like the same protective effect from inoculation with the anti-typhoid serum as in the case of vaccination and small-pox.

The prevention of the disease does not receive the space in these lectures which its importance demands, even although the best means to this end can only at present be expressed in generalities. The "prevention of contamination of water, air, and food" does not help us much in endeavouring to subjugate the disease.

Manual of Hygiene. By W. B. HAMER, M.D., D.P.H. Camb.
London: J. & A. Churchill. 1902.

THE literature of the subject of public health bids fair in a very short time to become as extensive as the whole of the other departments of medicine and surgery combined. This is no doubt a tribute to the importance of the subject; and every book dealing with general hygiene should be welcomed in proportion as it advances our knowledge of any of its branches. From this point of view the present work cannot be said to be a success; but it is only just to the author to note that he has compiled the book with special regard to those seeking to obtain a diploma in public health. Dr. Hamer has succeeded in this respect to a very considerable extent, and in the comparatively small compass of between 500 and 600 pages, has contrived to give what may be termed

a synopsis of the whole subject, which is bound to recommend itself to the student preparing for examination for the diploma. A noteworthy feature is that the book has been thoroughly brought up to date in all respects, many of the regulations which only became operative in 1902 being precisely indicated.

As this work does not pretend, as is sufficiently indicated by its title, to be a treatise on hygiene, criticism is disarmed to a considerable extent. The illustrations are few, and those that are given are practically all very old friends. Moreover, as this is not a laboratory book, a number of the illustrations showing the microscopic appearances of various objects might have been dispensed with.

The introductory chapter is excellent. The section on infectious diseases is far too short; but in this, as in the other sections, numerous references enable the reader to supplement the information by further reading.

In the section on air, the explanation of the mode of action of the syphon is ambiguous. The calculations on pages 29 and 30 might easily be simplified for the unfortunate student who has to work out such corrections. In referring to carbon dioxide, the author throughout invariably refers to it as carbonic acid, a name which is surely old enough to rest in obscurity on its laurels. On page 61, on the other hand, carbon monoxide is referred to by mistake as carbonic acid, an example of a combined mistake which might, under certain circumstances, be rather puzzling. The second paragraph in the determination of the hardness of water (page 120) contains quite a number of errors, and would require complete rewriting.

To the student within a few months of the examination for the diploma, and who has already gone over the work in a more extended way, Dr. Hamer's book will be welcomed, and can be heartily recommended.

Hygiene and Public Health. Second Edition. By LOUIS PARKES, M.D., and HENRY KENWOOD, M.B. London: H. K. Lewis. 1902.

THIS work has called for the present (second) edition within a year of the appearance of the first, and this fact alone indicates the esteem in which it has been held. From every point of view, the work is one of the best of the very numerous members of its class. The twelve chapters of which it consists are, however, very unequal in merit. Chapter I, dealing with water, is almost above criticism, and is full and accurate

throughout. Chapter II (disposal of refuse) is one of the best in the book. In that part of the chapter dealing with the disposal of sewage, the authors have contrived to give perhaps the most concise, complete, and convincing description of the biological treatment of sewage to be found in any book dealing with the subject. In the next chapter, on air and ventilation, the parts dealing with air pollution from offensive trades, and smoke prevention, are worthy of special notice. The fifteen practical points at the end of this chapter, with reference to any scheme of ventilation, are almost worthy of the term axioms. Chapter IV, on warming and lighting, is too short; and the subject of school hygiene which is included therein, while good as far as it goes, is dismissed in five pages. The next chapter, on soils and building sites, is particularly good, but the authors are certainly in error in stating (p. 337) that asphalt is the most durable material for street paving, except, perhaps, in the case of quiet residential streets with light vehicular traffic.

The following chapter (VI) may be chosen for detailed criticism. "Caisson disease" is well and fully described, but the effect of sudden lowering of atmospheric pressure, *mal de montagne*, is not even mentioned. On page 349, the "principal factors which determine the climate of a district" do not include the factors of rainfall and sunshine, which are, at least, of equal importance to some of those indicated. On page 353, Buys Ballot's law is described, but not named. The description of the rain gauge is incomplete, and the figure accompanying it will not help the reader.

Chapter VII, dealing with exercise and clothing, consists of twelve pages only, and is not worthy of the work. Moreover, the illustrations in this chapter are specially poor. All through the book the illustrations, which are relatively few in number, are inferior. For example, Fig. 63 is absolutely useless as a guide to the microscopic appearance of the spores of smut.

The chapter on food, beverages, and condiments is a good and reliable one, although here, also, condensation has been carried to the extreme. The three pages devoted to the effects of alcohol are, however, free from this defect, and are worthy of the most careful perusal.

Chapter IX, on the contagia, communicable diseases and their prevention, and hospitals, is splendidly written, and is thoroughly up-to-date. Here again, however, it is a pity that the authors should have thought it necessary to condense that part dealing with hospitals and their construction, ventilation,

&c., into ten pages. It is inevitable that the information thus given as to the various points is most meagre.

Chapter X (disinfection) is admirable, and, although condensed, seems to contain all that might reasonably be required from the candidate for the diploma in public health.

The penultimate chapter, on statistics, is too short, and will not be found sufficient by the candidate for the diploma.

The last chapter, dealing with sanitary law and administration, gives a well-arranged synopsis of the laws relating to England and Wales.

The book as a whole is an excellent one, but the continual expansion of the subject seems to call for more detail than can possibly be put into a little over 700 pages of 'cap. octavo.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By JOHN G. GRAY, M.D., F.F.P.S.G.

Banti's Disease.—Particulars of a case of this disease are given by Dr. Lubinow in the *Russki Wratsch*, 42, 1902.

The patient was a man, aged 36, in whom, six months before death, a small tumour was discovered in the abdomen. It gradually increased in size, remaining movable; it was apparently not adherent to the intestine. Chronic circumscribed adhesive peritonitis was diagnosed. Complete intestinal obstruction supervened.

On *post-mortem* examination the following appearances were found:—A moderate degree of jaundice, enlarged spleen, cirrhosis of the liver, and encapsuled peritonitis.

Microscopic examination of sections of the spleen revealed pronounced sclerosis of the Malpighian bodies and of the red pulp. In the liver, the connective tissue within and between the lobules showed chronic inflammatory changes.

The first impression which the appearance of the liver gave was that of atrophy, but closer inspection showed it to be the cirrhosis of Budd. The adhesions resulting from the peritonitis were composed of dense connective tissue.—(Lubowsky, *Deutsche Medizinisch-Zeitung*, 26th February, 1903; *vide* also abstract in *Glasgow Medical Journal*, May, 1903, on a case of Banti's disease reported in the *British Medico-Chirurgical Journal*, March, 1903, by Dr. J. Mitchell Clarke.)

Changes in the Spleen in Cirrhosis of the Liver.—*Lo Sperimentale*, 5th June, 1902, contains an article by Azzurini which is of interest in connection with the foregoing case, inasmuch as it deals with changes in the same organs that would seem to be chiefly involved in that disease, *viz.*, the liver and spleen.

The increase in the size of the spleen in cirrhosis of the liver points rather to a condition of passive congestion than, in the opinion of Liebermeister, to an excessive growth of connective tissue, or to a hyperplasia of the cell elements of the pulp, according to Jürgensen. Different sets of causes, corresponding to different stages in the process of enlargement, may be distinguished :—

1. Dilatation of the veins and cavernous tissue of the pulp.
2. Dilatation of the capillaries of the Malpighian bodies which begins at the periphery and progresses towards the centre. Extravasation of blood takes place and destruction of the cell contents of the Malpighian bodies.
3. Thickening of the capsule, of the connective tissue, of the trabeculæ, and of the sheaths of the veins.
4. An excessive destruction of red blood corpuscles.
5. A series of degenerative changes ending in granular degeneration of the cells of the pulp.—(Finder, *Deutsche Medizinisch-Zeitung*, 23rd March, 1903.)

Pulsus Infrequens.—Under this heading a paper by Dr. Thomas E. Sutterthwaite appears as an original communication in the *Albany Medical Annals*, March, 1903.

The author remarks that interest in this subject is becoming more widespread, and that it is bound to deepen until the main facts regarding its causation, natural history, and treatment have been mastered. The points that call for special attention are these :—

1. The use of the terms ending in "cardia" as synonyms is unfortunate, and should be departed from. It implied that the key to the altered state of the arterial current was to be found in the heart rather than in peripheral arteries, whereas the reverse was the case.
2. The infrequent pulse may be physiological, or it may be pathological. It is of importance, as regards the prognosis and treatment, to recognise the category to which it belongs in a particular case.
3. The pulse may be really deficient, or it may intermit.
4. Its association with mitral disease, and more especially with stenosis of the mitral valve, arteriosclerosis, cerebral affections, diabetes, chronic nephritis, and poisoning by digitalis.
5. The action of cardiac tonics generally in this condition, and the danger of giving digitalis in large doses. When of pathological origin it is always better, so far as possible, to treat the underlying disease without special reference to the infrequency of the pulse.
6. The very imperfect state of our knowledge regarding the causation of the infrequent pulse.

The Chemical Composition of the Blood in Chlorosis.—Dr. Franz Erben contributes an article on the above subject to the *Zeitschrift f. Klin. Med.*, 47, 3 u. 4.

He gives the results of examination of the blood as a whole, and propounds and endeavours to answer certain questions suggested by the analysis. The following are the changes found in the blood :—

1. The albuminous constituents are less, inasmuch as the amount of hæmoglobin is less; the proportion of albumin to globulin is normal. There is an increase in the amount of fibrin.
 2. The increase in fatty constituents is considerable in the serum as well as in the erythrocytes; lecithin is reduced in amount in the blood as a whole, as also in the serum, while in the erythrocytes it would appear to be increased.
 3. As regards the inorganic constituents, phosphoric acid, potassium and iron are considerably less in amount on account of the changes in the red blood corpuscles; calcium and magnesium are increased.
- The increase in chloride of sodium is apparent, not real, since the blood of the chlorotic patient is richer in serum than normal blood; there is no increase in the actual amount of chloride of sodium in the serum.

The writer then proceeds to enquire whether, in chlorosis, an increased destruction of red blood corpuscles takes place, or whether we have to deal with a defective new formation of erythrocytes. He tends to favour the latter view, and adduces the following arguments:—

1. That lecithin and phosphoric acid, important constituents of serum and likewise of the erythrocytes, are less in amount. It would be very unlikely to meet with a decrease in the amount of lecithin when a destruction of the red blood corpuscles is taking place; on the contrary, we would expect that, being set free, it would be found in greater abundance, especially as the blood of the chlorotic patient appears to have much greater difficulty in effecting the combustion of fatty substances than the blood of a healthy individual; this is shown by the constant presence of fatty substances in large amount in the blood in this condition.

2. That iron is not present in the serum to any appreciable extent.

3. That the red blood corpuscles are very poor in extractives.

The large amount of potassium found in the serum may be adduced as an argument in favour of increased destruction of the red blood corpuscles. It is, however, to be observed that there are other circumstances which may account for this, such as its great diffusibility; when set free in the kidneys it may find its way in large quantity into the serum.

Again, the large proportion of fatty substances in the erythrocytes may be held to favour the former view.—(Lubowsky, *Deutsche Medizinisch-Zeitung*, 9th April, 1903.)

SURGERY.

By JOHN PATRICK, M.A., M.B., AND ARCH. YOUNG, B.Sc., M.B.

A Method of Iodoform Bone-Stopping.—Mosetig-Moorhof (Vienna), in the *Centralblatt für Chirurgie*, 18th April, 1903, expresses his dissatisfaction with some of the methods of dealing with cavities in bone resulting from chronic osteomyelitis, with removal of sequestra. It is essential that the bone-cavity be rendered as nearly as possible sterile. The walls of the abscess cavity or cloaca must be dealt with by means of the sharp spoon or chisel, even to the removal of eburnated bone, till fresh healthy bone is reached. Where this thoroughness is impracticable, the cavity is to be cleansed with formalin (1 per cent) or peroxide of hydrogen (20 per cent), and it should be dried with hot air or a continuous stream of cold filtered air. The iodoform stopping material is composed of sixty parts iodoform with forty parts spermaceti and oil of sesame, sterilised by being placed in a water-bath, of temperature 80° C., for a quarter of an hour. This emulsion is now slowly poured into the cavity, air being carefully excluded. In a few minutes the fluid sets, and the wound is closed by stitches, flaps being prepared previously, if necessary. Sinuses, if present, may be made use of for drainage, otherwise it is not required; practically, however, there is no hæmorrhage and no secretion. The limb should be dressed and splints applied, not to be removed for ten to fourteen days. Healing is usually by first intention.

Mosetig-Moorhof advocates the adoption of this method in cases of joint disease where the cartilages are removed possibly with a small slice of bone. In resection of wrist, ankle, and hip-joints, the cavity left may be filled up with iodoform stopping.

The fate of the mass is observed by Röntgen-ray photographs, as iodoform in bulk shows as definitely as a piece of metal. A series of three plates makes it quite plain that the mass is slowly absorbed, and its place taken by healthy bone. The stopping, therefore, is temporary—it is a stop-gap, and appeases nature's horror of a vacuum. Its absorption is very slow; the

author does not make any statement of its rate except that a mass of iodoform stopping in a femur had completely disappeared in a year. The slow rate of absorption precludes any risk of iodoform poisoning; as much as 100 to 150 grams of the mixture produced no ill effects.

The author has used the plan in 120 cases of chronic osteomyelitis, abscess of bone, necrosis, and caries, with uniform success; all cases healed without sinuses; two cases of necrosis of the femur were able to leave hospital in three weeks completely healed.—J. P.

So-called Idiopathic Dilatation of the Large Intestine.—A paper on this subject is contributed to the *Revue de Chirurgie* (10th April, 1903) by Dr. Pierre Duval. After a historical survey of the development of present-day views on this affection, and a general consideration of the symptoms and course in most of the recorded cases, the incidence and severity of the condition, the difficulties in diagnosis, and the treatment—both medical and surgical—are fully discussed.

The following is a brief *résumé* of the last three sections of Duval's monograph:—

Incidence and severity of the condition.—"So-called idiopathic dilatation of the large intestine appears as a disease of the early years of life; it is sometimes 'congenital,' in the proper sense of the word; most often it appears in earliest infancy; occasionally, but exceptionally, in adult years.

"It usually leads to serious disturbances, which occasion death in the earliest years of life; but it is essential to remember that it is compatible with prolonged existence, and that grave symptoms may appear only at the age of adolescence or even in adult life.

"In five cases death occurred at age of 23, 28, 50, 50, 55 years respectively; in four cases surgical treatment was found necessary at age of 28, 37, 40, 42.

"The affection is characterised essentially by an obstinate constipation, amounting even to complete obstruction, with enormous abdominal distension."

Diagnosis.—"This seems, *a priori*, simple; and, as a matter of fact, American and English physicians lay it down as certain and straightforward.

"Where the constipation is chronic and obstinate, where abdominal distension attains an enormous degree, and where visible peristalsis is marked through the abdominal parietes, the diagnosis is not difficult. This *tripod of symptoms* permits of a definite diagnosis.

"We would notice, in fact, only three errors in diagnosis, and these are illustrated by (1) a case thought by Bristowe to be one of tuberculous peritonitis; (2) one case of Geuerich's, which was regarded as a rachitic distension of abdomen; and (3) a case which Richardson believed to be one of appendicitis.

"The confusion with tuberculous peritonitis is understandable where abdominal distension is accompanied by dilatation of the subcutaneous parietal veins, where palpation gives a feeling of fluctuation, where percussion gives, here and there, areas of dullness. Dilatation of the colon will be recognised by constipation present from birth, and by subparietal visible peristalsis.

"Rachitic abdominal distension is not accompanied by this congenital and obstinate constipation, nor by visible peristaltic movements of the bowel; though, of course, children affected with dilatation (idiopathic) of the colon may, it is true, be rachitic.

"As for appendicitis, only the acute, painful, paroxysmal attacks could lead to confusion, otherwise it ought to be out of the question.

"The constipation of infants at breast and of very young children may at times be difficult to differentiate. It is, however, never so pronounced, dilatation of colon in these never attains such dimensions, and treatment is efficacious.

"In the adult, colic distension might give rise to erroneous diagnosis. In addition to possible confusion of faecal masses with any or all abdominal tumours, colic dilatation should be differentiated from all chronic incomplete occlusions. Intestinal peristalsis may suggest a stricture of the bowel.

"The most important point is the very long continuance of the constipation and of the abdominal distension."

Treatment.—After considering fully the various methods of medical treatment—by enemata, abdominal massage, electricity, careful dieting, and attention to intestinal hygiene—M. Duval goes on to consider the possible surgical procedures.

"At the very outset, puncture of the intestine must be *absolutely* rejected. If in four cases it was inoffensive, it caused death in Martin's case, and in the four cases mentioned it was quite useless.

"Surgical treatment ought to choose then between colostomy, colopexy, and colectomy. Treves successfully carried out one colopexy, one colostomy, one colectomy; Woolmer, one colopexy and one colostomy; Martin, two laparotomies; Richardson, five successive celiotomies."

[Duval here remarks on the uncertainty which attaches to the surgical procedure applicable to a particular case, and asks—"Is this not the best of proofs that fixed therapeutic rules or laws are far to seek?"]

"Is it not necessary to ask at the very outset," remarks the author, "if the affection is really one belonging to the province of surgery?" "We have seen," he says, "what good effect non-operative treatment has had in certain cases."

"Surgical treatment ought only to be undertaken when, with the most rational alimentary hygiene and most regular treatment of the constipation, the affection advances and becomes menacing.

"Two varieties of operation then offer themselves—the one *palliative*, colostomy, intestinal anastomosis (discussed, but not practised, by Richardson), colopexy; the other *curative*, colectomy.

"Colostomy has given some immediate good results, but the after-history in these cases is not clear: in one case the result was not satisfactory, or sufficient. It may be clearly indicated even as an incomplete palliative intervention; it may be an operation of urgency in case of complete occlusion or of acute colitis; but only in complete involvement of the whole colon would one be justified in condemning patients to a permanent artificial anus. The opening ought to be on the cæcum.

"Colopexy, in two recorded cases, has had a favourable result; in two cases it was insufficient. *A priori*, this operation is not directed to the special lesion; the dilatation of the colon and the simple fixation of a dilated loop would not appear likely to restore its normal contractibility. It could only correct vicious bends or folds of the bowel, the sutures impeding the intestinal circulation; but we have seen that these abnormal folds do not exist.

"Colectomy alone remains. It is certainly, so to speak, the ideal operation. Long portions may be resected—*e.g.*, Treves has resected the whole left half of the colon; he excises the whole affected portion. This is curative in the proper sense of the word.

"Still one can only deal thus with sectional or diverticular dilatations; the complete varieties do not admit of this method being adopted.

"The records of colectomy for this affection give 1 death, 2 unsuccessful cases, 2 successes. The death is attributable to a fault in the operative technique. The two unsuccessful cases are two successive colectomies on a like intestinal loop; after the first, the pelvic colon reproduced itself, as it were, and became quite as long and widely dilated as before; after the second, the distension extended to the subjacent portions of the colon. There are, then, two frank successes.

"This therapeutic formula may then be given:—

"Colostomy and colopexy may probably be discarded; colectomy ought to be reserved for dilatations of segmentary and diverticular character, where the local condition threatens to get worse, or there is a danger of involvement of any other segments of the colon; *intestinal anastomosis* (ileo-sigmoidostomy), for cases of total distension, with the drawback, it is true, of leaving in the abdomen the enormous intestinal pouches formed by a colic dilatation.

"It is fitting always to note that after ileo-sigmoidostomy the colic pouch

ought to atrophy considerably, as does every segment of bowel shut off by entero-anastomosis.

"To predicate beforehand is impossible, but it is logical to hope that a larger knowledge of the affection will conduce to a well-regulated line of surgical treatment."—A. Y.

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

A Contribution to the Natural History of Dysmenorrhœa.

—Drs Herman and Andrews contribute a paper on this subject to the *Transactions of the London Obstetrical Society*, 1902, part iv, and they give the following abstract. The authors compare a number of cases of dysmenorrhœa cured by dilatation of the cervix with a number of others in which dilatation of the cervix produced no benefit. They find no reason to think that dysmenorrhœa curable by dilatation is frequently associated with imperfect development of the uterus.

They find that dysmenorrhœa curable by dilatation begins with the establishment of menstruation in about two-thirds of the cases, and is acquired later in about one third; that it almost always begins before the age of 25, but may be acquired at any age.

They find that the result of treatment is not materially affected by the length of time the dysmenorrhœa has lasted, the age of the patient when treated, or the duration of her married life.

They find that in most cases cured by dilatation the time of commencement of pain is very near to time of commencement of the flow, while in most of the cases not cured by dilatation the pain begins two days or more before the flow. In half of those cured by dilatation the pain lasts more than four days. In four-fifths of those cured by dilatation the pain is paroxysmal; in three-fourths of those not cured by dilatation it is constant. In most of those cured by dilatation the pain is not relieved by lying down.

The authors give details showing the severity of the pain. They find that only a few patients were known to pass membranes, and that in only a few were there physical signs of disease. They find no evidence of such narrowing of the cervical canal as to mechanically hinder the flow of blood through it. They think it possible that some degree of smallness and rigidity of the canal may hinder the physiological dilatation of the canal which should take place during menstruation, and so provoke painful contractions of the uterine body, but they are unable to adduce evidence of this.

They give tables showing the known duration of cure in the cases on which the paper is based, and the number of cases in which pregnancy followed dilation in married women who were previously sterile.

In the discussion which followed, Dr. Horrocks said that to effect cure by dilatation it was essential to rupture the fibres. For this reason he had adopted a modification of Sims' operation. That is, in addition to slitting the cervix backwards from the os externum up to the posterior fornix, he made a counter-incision to the left or to the right of the cervix, which thus was divided into two unequal parts, a quarter and three-quarters respectively. His object was to cut through the circular fibres twice. He did not agree with the authors, who said that cases of stenosis of the uteri existed only in textbooks. In his experience, cutting and dilating the cervix was useless in membranous dysmenorrhœa. The os might be large enough to admit of a free flow of fluid blood, but not of the passage of clots.

Dr. Heywood Smith disagreed with the authors, and thought ante flexion was usually the cause of that form of dysmenorrhœa which was characterised by forcing pains at the beginning of the flow. After dilation he introduced a

glass stem. Dr. Duke similarly uses a spiral wire stem. This stem could be worn by his patients while going about, and some of them even bicycled.

Dr. Galatin dilated up to No. 14 Hegar's dilator, as a rule. Dr. Lewers found the amounts of dilatation practicable to vary much—9 of Hegar, or up to as much as 17; the occurrence of fresh bleeding was a guide to the amount required.

Clinical Report of the Rotunda Hospital, Dublin. By Dr. Purejoy and others.—This report is published in the *Dublin Journal of the Medical Sciences*, March, 1903. Details are given of many interesting cases. Among the tables given is one of 21 cases of accidental hæmorrhage, in which we note that plugging the cervix or vagina, with the application of a tight binder, seems the favourite method of treatment. Out of 1,676 cases, craniotomy was required once in the intern department, and not at all in 2,190 in the extern department. Labour was induced eleven times. Rickets as we know it in Glasgow seems not common in Ireland.

Bilateral Ligature of the Internal Iliac and Ovarian Arteries in Cases of Inoperable Carcinoma of the Uterus.—Dr. Lindenthal communicates three cases to the *Zentralbl. f. gynæk.*, 7th March, 1903, in which this operation was performed for the arrest of uncontrollable bleeding. In all of these the bleeding was arrested. He describes the operation as easy, and recommends a median incision in the peritoneum as giving access to the internal iliac arteries more easily than through lateral ones, as the left artery is sometimes covered by the mesorectum. In one case the carcinomatous enlargement of the glands lying in the angle of the bifurcation of the common iliac artery causes some difficulty in applying the ligature. He quotes cases also from the practice of Krönig and Iwanow, who have got good results. They do not, of course, consider the operation anything else than "palliative," but assert that the operation should always be undertaken before closing the abdomen in cases where it has been opened with a view to removing a carcinomatous uterus, and the radical operation is found to be impossible.

Incomplete Transverse Congenital Occlusion of the Vagina.—Dr. Brickner contributes an article on this subject to the *New York Medical Journal*, 7th March, 1903. The author describes four cases in detail clinically; one of them only was seen for the first time during labour, the others had never been pregnant. Dr. Brickner discusses the etiology at length, and criticises the literature of the subject. He comes to the following conclusions:—

Transverse septa are rare, occurring about once in 5,000 cases. They are derived from an inclusion by Müller's ducts of cells from the Wolffian duct or ducts after the formation of the genital cord, and are, therefore, of epiblastic origin. Their perforation is proof of the normal conduct of Müller's ducts in all other respects. Transverse septa of the vagina are normal in adult sheep, whales, dugongs, the manatee and the chimpanzee; accordingly, they represent in the human being a reversion, "a return to an ancestral type." Their function is quite doubtful, but may have to do with the facilitation of conception; and when they appear in the human female may have a similar purpose in harmony with other minor defects of development. The treatment of the condition is excision of the septum with suturing of the cut edges. In unmarried women no treatment is necessary. If the septum is first seen in early pregnancy, it may be excised; if during labour, a crucial incision will be sufficient with subsequent removal of the septum. The prognosis for the child is usually bad unless the septum is incised early, or unless it is not too strong to be burst by the advancing head; for the mother it may result in serious lacerations or fatal hæmorrhage.

If we may criticise the author's conclusions it is to suggest that with patience these septa often dilate and soften like other parts of the parturient and genital canal, and that labour may end spontaneously with good results to mother and child.

A New Method of Abdominal Fixation of the Uterus.—Dr. Foschini describes his operation in the *Riforma Medica* of 4th February, quoted in *New York Medical Journal*, 14th March, 1903. His method, briefly, is to open the abdomen in the middle line and free the uterus and bring it up to the abdominal wound. Then, three or four finger-breadths above the *symphysis pubis* and about $1\frac{1}{2}$ inch external to the inner border of each rectus, a blunt forceps is thrust through the deep layers of the abdominal wall, but avoiding the skin, so as to make a small buttonhole through which the round ligament is brought up, and stitched to the muscle and to the fascia over the muscle. The median incision is closed, and the skin covers all these incisions.

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

Paralysis of the Ocular Muscles.—In the January number of the *Archiv. d'Ophthalm.*, Landolt once more gives a very satisfactory and complete vindication of the method of treating these affections by advancement. It is an addition to the ophthalmic art which we owe almost entirely to the genius of Landolt, and this, his latest contribution to the subject, is by no means the least interesting. It concerns six observations. Like ourselves, the author, in making measurements, uses prisms marked in angles of minimum deviation.

CASE 1. *Paresis of left external rectus causing a homonymous diplopia of 8°.*—The healthy eye could be turned outwards to the extent of 60°, but the affected one only to 54°. The affected external rectus muscle was advanced, and at the same time slightly shortened. The immediate effect was a divergence with crossed diplopia. A month after the operation the positive convergence was found to be 12 metric angles, the negative 2.5 metric angles, making a total range of convergence of 14.5 metric angles.

Here there is a very marked increase in the negative convergence without any loss in the positive, a result which could not have been obtained by tenotomy. This latter operation would simply have restricted the positive convergence without in the least increasing the negative.

CASE 2. *Paresis of the left external rectus: homonymous diplopia of 18°.*—The temporal excursion of the affected eye amounted only to 37° and that of the healthy eye to 52°. Both eyes were emmetropic, and the visual acuteness was above the normal. An advancement of the affected muscle along with its resection was made. The sutures were removed five days after the operation. Fusion immediately took place, the amplitude of convergence was found to be normal, and the temporal excursion of the affected eye amounted to 37°.

CASE 3.—This case is of special interest. The patient was a young man of 35 years, and was affected with paralysis of the external muscle of the right eye, which gave rise to a homonymous diplopia of 25°. The temporal excursion of the affected eye amounted only to 8°, while that of the healthy eye was 42°.

The affected muscle was advanced and very considerably shortened. Seven days after the operation there still existed some 13° of diplopia, for the correction of which the patient followed orthoptic exercises. These consisted in placing a candle at a great distance and in turning his head to the right till he obtained binocular fixation. This he tried to maintain while turning his head back again. Four months later the strabismus had disappeared, as had also the homonymous diplopia.

CASE 4. *Paralysis of each external rectus, with a resulting homonymous diplopia of 30°.*—The temporal excursion of the left eye was only 5°; that of the right, 8°. In each eye the nasal excursion was 55°. Odd to state that, notwithstanding the paralysis of the right external rectus, the patient with

the right hand had no difficulty in localisation, and only made an error of 4° with the left hand. The first operation was an advancement, with resection of the left external muscle. Seven days later there was found to be only 8° of homonymous diplopia. Fourteen days later the same operation was performed on the other eye. Seven days after the operation there was still 6° of convergence. Three months after the operation the strabismus and the diplopia had disappeared, except for forced fixation to the right.

The fields of fixation before and after the operations were as follows :—

		Before.	After.	Difference.
Left eye,	{ Temporal, .	5°	55°	+ 50°
	{ Nasal, .	55°	45°	- 10°
		<hr/> 60°	<hr/> 100°	<hr/> + 40°
Right eye,	{ Temporal, .	8°	45°	+ 37°
	{ Nasal, .	55°	40°	- 15°
		<hr/> 63°	<hr/> 85°	<hr/> + 22°

Tenotomy would only have destroyed the nasal movements without in the least improving the temporal.

Missing out Case No. 5, the last given in the communication under review is one of paresis of the superior rectus of the right eye. The immediate effect of the operation was an over-correction of some 3', but within a few days fusion was perfect.

In our own clinique, ever since Landolt's paper to the Edinburgh International Ophthalmological Congress, we have entirely abandoned tenotomy except in cases where there is a high and presumably a permanent amount of amblyopia. Here, of course, operation is only undertaken to remedy disfigurement, and when an advancement does not bring the squinting eye apparently straight, we prefer to combine it with tenotomy rather than to touch the patient's healthy eye. With modern methods the chance of sepsis is no doubt very remote, but still it exists; therefore, when one eye is to all intents and purposes blind, and the patient has only one useful eye, we are strongly of opinion that it ought not to be touched.

At the end of his paper the author makes short reference to two cases of isolated paralysis of the superior oblique. In both cases advancement of the inferior oblique was followed by the best results. Once only have we had an opportunity of performing a similar operation, and it was quite satisfactory, the patient having binocular fixation for an angle of 30° below the horizontal.

The Examination of the Pupil. By Henry Coppez (*Archiv. d'Ophthalm.*).—This is a most important paper, and contains much information of interest to the physician as well as to the neurologist and ophthalmic surgeon.

The author begins with a full discussion of the nerves which stimulate respectively the sphincter of the pupil and the muscle which causes dilatation. Amongst other things, we observe that he attributes the myosis so frequently seen with the Argyll-Robertson phenomenon to a paresis of the dilating muscle, which phenomenon he attributes to an affection localised in the two nuclei containing small cells of the nucleus of the third nerves.

In examining the pupil, attention should first be directed to the photo-motor reflex. Coppez believes that this is best examined by placing the patient in a chair in front of a window. In the physiological condition the pupils measure from 2 to 4 mm., the majority being from 2.5 to 3. Above and below these figures some pathological condition should be suspected.

The following points should be noted :—

1. In a state of repose the *relative sizes* of the pupils must be ascertained. Are they equal, or has one a greater diameter than the other?

2. The *absolute diameter* of each pupil should then be ascertained, the other being entirely shut out by a black screen.

3. The *direct reaction* of each should be noticed. Is it normal, or diminished, or absent?

4. The *consensual reflex* must then be observed, and it should be noted whether it is normal, or diminished, or absent.

5. Lastly, the patient should be made to look at an object about 16 inches from him, so that the changes of the pupils during *convergence and accommodation* may be ascertained.

Apart from the photo-motor reactions, there are other signs which must be investigated. Often while making the examinations above indicated the observer will notice a primary irregularity of the pupils, which irregularity remains constant. Sometimes we have here to deal with a physiological condition, sometimes with a disturbance of the innervation of the dilation of the pupil.

To differentiate these anomalies, mydriatics and myotics must be used. The author does not believe that the vascularity of the membrane *per se* is of much importance. The iris can be made almost completely anæmic by an injection of adrenalin without the dimensions of the pupil being perceptibly altered.

Atropine acts by paralysing the terminations of the third nerve in the muscle itself.

Cocaine seems to have a double action. Its primary action is to stimulate the dilating films. To a less extent it has an action similar to atropine.

Eserine is just the opposite of atropine—it stimulates the terminations of the short ciliary nerve in the iris itself.

These facts being established, the following are the effects of these alkaloids in pathological conditions:—

Paralytic mydriasis.—Atropine increases the mydriasis, as does also cocaine. Eserine contracts the pupil if the paralysis of the motor oculi stops at the ciliary ganglion.

Spasmodic mydriasis.—Atropine produces maximum of mydriasis, for to the spasm of the dilator it adds paralysis of the sphincter. Cocaine is without action. Eserine contracts the pupil, but to a less extent than in paralytic mydriasis.

Spasmodic myosis.—Atropine causes the spasm to disappear. It dilates the pupil as in normal conditions. Cocaine is without action. The spasm of the dilator is not sufficiently strong to overcome that of the sphincter. Eserine is without action.

Paralytic myosis.—Atropine produces only a moderate dilatation. Cocaine will dilate the pupil if the nerve terminations in the muscle are intact. Eserine produces maximum of dilatation.

The Accuracy Requisite in Vision Testing. By Kenneth Scott (*Knapp's Archives*).—This is a very elementary paper, but it contains some hints on important points which are apt to be overlooked. He specially insists on the glass which is being used in retinoscopy being well centered, which implies that the trial frame is so constructed that careful adaptation can be obtained. In clinics we often see any trial frame being used for the purpose, and very frequently the result is that the lenses when put into the frame are considerably decentered.

Primary Epibulbar Sarcoma. By Verhoeff and Loring (*Knapp's Archives*).—The case here recorded was one of melanotic sarcoma appearing near the limbus corneæ. The unusual features in the case were early involvement of the sclera, of the choroid, and of the iris. The chief value of the communication is the very exhaustive bibliographical notes appended to the article. The authors do not accept the generally received opinion that these tumours, comparatively speaking, are benign, and advance a great deal of important evidence in support of their view.

PUBLIC HEALTH AND INFECTIOUS DISEASE.

BY HUGH GALT, M.B., C.M. GLASG., D.P.H. CAMB.

Distribution of the Diphtheria Bacillus and the Bacillus of Hofmann in the Throats of "Contacts" and Normal Persons.—In the *Journal of Hygiene* for April, G. S. Graham-Smith, M.A., D.P.H., M.B. Camb., has an article under the above heading. He points out that the view that virulent diphtheria bacilli do not occur in the mouths and noses of persons who have not been in some way exposed to persons suffering from the disease, or persons who have acquired the bacillus by being so exposed, is not held by all authorities on the subject, a minority believing that the bacillus is found in small numbers amongst the normal population. "Should the view of the latter school be accepted, the method of attempting to suppress epidemics by the isolation of healthy individuals is not only likely to prove useless, but entails unnecessary hardships on the isolated persons." Dr. Graham-Smith has collected a number of statistics from various sources to show that virulent diphtheria bacilli do not exist in the noses and throats of healthy persons who have had no opportunity of acquiring them by contact. A discussion on the bacteriological aspect of the subject follows. A "summary" at the conclusion of the paper indicates that Hofmann's bacillus is innocuous to man, is a very common organism in the mouths of the poorer classes, and is readily carried from mouth to mouth, indicating "how widely spread and uncontrollable an outbreak of diphtheria may become unless measures are taken to deal with infected contacts." The summary also indicates that virulent diphtheria bacilli have been found in a considerable proportion of persons who have come into contact with cases of diphtheria, or with other infected persons, without themselves contracting the disease.

Disinfection of Rooms by means of Spray.—In the *Journal of the Sanitary Institute* for January, 1903, Dr. J. C. Thresh and Mr. G. Sowden contribute the results of a series of experiments with various disinfectants employed in the form of spray. The disinfectants were Izal, Jeyes' Fluid, Chinosol, and Formaldehyde. The authors emphasize the fact that they "obtained no sterilising effect whatever with sprays which did not thoroughly wet the surfaces with the disinfectants used."

New Sewage Works at Manchester.—In the same number of the *Journal of the Sanitary Institute* there appears a description of the new works for the biological treatment of the sewage of Manchester, by Mr. J. P. Wilkinson, A.M.Inst.C.E., engineer of the works. Five additional tanks have been provided, making sixteen in all; and bacteria beds have been supplied in proportion. The septic tanks are open. The total cost of the new works is nearly half a million sterling.

Viability of the Enteric Bacillus in Soil and Sewage.—Major R. H. Firth, in the same number of the *Journal*, gives the results of the investigation as above, conducted by Major Horrocks and himself. Their conclusions are that "the enteric bacillus is not only a much more hardy micro-organism than many have supposed, but is capable of assuming a vegetative existence, and surviving in ordinary and sewage-polluted soil for periods varying from fifty-three to sixty-five days." From soil in the form of dust and containing the bacillus, the latter can be obtained up to the twenty-fifth day. In crude sewage the bacillus can survive for at least twelve days. It can also be washed through 18 inches of closely packed soil by percolating water. The authors point out that the effluents from the bacteria beds in the biological treatment of sewage are potentially dangerous.

Removal and Isolation of Infectious Patients in Populous Districts.—In the *Medical Magazine* for April is an abstract from an interesting paper on the above, read at Manchester by Dr. Meredith Young on 7th February last. The points discussed are as follows:—(1) The effect hospital isolation has in reducing the prevalence of scarlet fever; (2) the effect hospital isolation has on the occurrence of complications in scarlet fever; (3) the effect hospital isolation has on the mortality of scarlet fever. The question of how long cases of scarlet fever, diphtheria, and small-pox should be detained in hospital is also gone into at some length, Dr. Young opining that in cases where there is an infectious discharge the patient should be transferred to a convalescent ward for a couple of weeks or so, in addition to the usual period of detention. Dr. Young also discusses the so-called "Leicester system" of dealing with small-pox, by which "contacts" kept from work are paid compensation, and points out that this measure has been adopted for many years by numerous local authorities.

Books, Pamphlets, &c., Received.

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Muco-Membranous Entero-Colitis; Symptoms, Complications, Etiology, and Treatment, by Maurice de Langenhagen, M.D. London: J. & A. Churchill. 1903. (3s. 6d.)

Tropical Diseases: A Manual of the Diseases of Warm Climates, by Patrick Manson, C.M.G., M.D., LL.D. (Aber.) With 150 Illustrations and 2 Coloured Plates. New and Revised Edition. London: Cassell & Co., Limited. 1903. (10s. 6d. net.)

Portfolio of Dermochromes, by Professor Jacobi. Parts I and II. English adaptation of text by J. J. Pringle, M.B., F.R.C.P. London: Rebman, Limited. 1903.

Manual of Practical Anatomy, by D. J. Cunningham. Vol. I: Upper Limb, Lower Limb, Abdomen. Third Edition, Illustrated with 205 Engravings, many in Colours. Edinburgh: Young J. Pentland. 1903.

Obstetrics: A Text-book for the use of Students and Practitioners, by J. Whitridge Williams. With 8 Coloured Plates and 630 Illustrations in the text. London: D. Appleton & Co. 1903. (25s. net.)

- Ocular Therapeutics according to the most Recent Discoveries, by Dr. A. Darier. Translated by Sydney Stephenson, M.B., C.M. London: J. & A. Churchill. 1903. (10s. 6d. net.)
- Operative Surgery, by Herbert Wm. Allingham, F.R.C.S. London: Baillière, Tindall & Cox. 1903. (7s. 6d. net.)
- The Surgical Diseases of the Genito-Urinary Organs, by E. L. Keyes, A.M., M.D., LL.D., and E. L. Keyes, Jr., A.B., M.D., Ph.D. A revision of Van Buren and Keyes' Text-book. With 174 Illustrations in the text and 10 Plates, 8 of which are Coloured. London: D. Appleton & Co. 1903. (21s. net.)
- Where shall I Send my Patient? A Guide for Medical Practitioners and Book of Reference to the Health Resorts for Institutions for Patients of Great Britain. Bournemouth: E. J. Frampton. 1903.
- The Manual Treatment of Diseases of Women, by Gustaf Norström, M.D. London: G. E. Stechert. 1903. (10s.)
- Chronic Headache and Its Treatment by Massage, by Gustaf Norström, M.D. London: G. E. Stechert. 1903. (4s. 6d.)
- The Physiology of Mastication, and Kindred Studies, by J. Sim Wallace, M.D., D.Sc., L.D.S. London: J. & A. Churchill. 1903. (1s. 6d.)
- Squint: Its Causes, Pathology, and Treatment, by Claud Worth, F.R.C.S. London: John Bale, Sons & Danielsson, Limited. 1903. (6s. net.)
- A Manual of Plague, by William Ernest Jennings, M.B., C.M., with an Introduction by Surgeon-General G. Bainbridge, M.D., M.R.C.P., I.M.S. London: Rebman, Limited. 1903.
- The Pocket Therapist: A Dictionary of Disease and its Treatment, by Thomas Stretch Dowse, M.D. Third Edition, Revised and Enlarged. Bristol: John Wright & Co. 1903. (6s. 6d. net.)
- Thirty-five Years at Contrexéville, by Debout D'Estrées, M.D. Translated from the French by A. C. Grylls, M.A. London: The Health Resorts Bureau. 1903. (2s. 6d. net.)
- A Manual of Surgical Treatment, by W. Watson Cheyne, C.B., M.B., and F. F. Burghard, M.D. In Six Parts. Part VI, Section II. London: Longmans, Green & Co. 1903. (21s.)
- The Imperfectly Descended Testis: Its Anatomy, Physiology, and Pathology, by W. M'Adam Eccles, M.S., F.R.C.S. Eng. London: Baillière, Tindall & Cox. 1903. (7s. 6d. net.)
- Carlsbad and Its Therapeutical Importance, by Francis Zatloukal, M.D. Illustrations. Second Edition. London: The Health Resorts Bureau. 1903.
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 23RD MAY, 1903.**

	WEEK ENDING			
	May 2.	May 9.	May 16.	May 23.
Mean temperature, . . .	47·2°	46·9°	46·8°	50·6°
Mean range of temperature between day and night, . .	12·9°	11·2°	13·6°	17·0°
Number of days on which rain fell,	5	5	3	4
Amount of rainfall, . . ins.	0·21	0·76	1·30	0·17
Deaths registered, . . .	311	296	292	282
Death-rates,	20·6	19·6	19·3	18·6
Zymotic death-rates, . .	1·7	1·7	2·3	2·0
Pulmonary death-rates, .	7·1	6·3	5·5	5·6
DEATHS—				
Under 1 year,	66	56	69	56
60 years and upwards, .	68	70	59	67
DEATHS FROM—				
Small-pox, . . . . .	..	...	...	...
Measles,	2	2	9	3
Scarlet fever, . . . . .	...	2	...	...
Diphtheria,	1	2	4	3
Whooping-cough, . . .	15	14	12	13
Fever,	1	2	2	1
Diarrhœa,	6	3	7	10
Croup and laryngitis, .	2	...	2	...
Bronchitis, pneumonia, and pleurisy,	79	53	63	51
CASES REPORTED—				
Small-pox, . . . . .	...	1	1	...
Diphtheria and membranous croup,	9	10	10	13
Erysipelas,	17	17	21	15
Scarlet fever,	36	27	30	44
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	13	18	13	10
Continued fever, . . .	..	...	...	...
Puerperal fever, . . .	2	5	3	2
Measles,*	84	81	62	105

* Measles not notifiable.

SANITARY CHAMBERS.
GLASGOW, 27th May, 1903.

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